Turin NETWORKS

Adit 3000 Series and Multi-Service Router (MSR) Card

CLI REFERENCE MANUAL

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MSR Card - 2.0
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Corporate Contact Information:

Turin Networks
1415 North McDowell Blvd.
Petaluma, CA 94954
Phone: +1-707-665-4400
Fax: +1-707-793-4935
www.TurinNetworks.com

Customer Support:
E-mail: tech-support@TurinNetworks.com
Phone: 800-786-9929 or 303-218-5655

Supporting Software Versions:

Adit 3104 - Release 1.6

Adit 3200 - Release 1.6

Adit 3500 - Release 1.6

Multi-Service Router (MSR) Card - Release 2.0

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PREFACE

Safety Information

CAUTION! **WHEN USING YOUR TELEPHONE EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK AND INJURY TO PERSONS, INCLUDING THE FOLLOWING:**

- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- Refer to the installation section of this manual for a safe and proper installation procedure. All wiring external to this equipment should follow the current provision of the National Electrical Code

NOTE: For Safety and Compliance information for the Multi-Service Router (MSR) card and Adit 600 platform, please refer to the *Adit 600 User Manual*.

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Notices

This manual contains important information and warnings that must be followed to ensure safe operation of the equipment.

DANGER! **A *DANGER* NOTICE INDICATES THE PRESENCE OF A HAZARD THAT CAN OR WILL CAUSE DEATH OR SEVERE PERSONAL INJURY IF THE HAZARD IS NOT AVOIDED.**

CAUTION! **A *CAUTION* NOTICE INDICATES THE POSSIBILITY OF INTERRUPTING NETWORK SERVICE IF THE HAZARD IS NOT AVOIDED.**

WARNING! **A *WARNING* NOTICE INDICATES THE POSSIBILITY OF EQUIPMENT DAMAGE IF THE HAZARD IS NOT AVOIDED.**

NOTE: A *Note* indicates information to help you understand how to perform a procedure or how the system works. Notes should be read before performing the required action.

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CHAPTER 1

Introduction

This Reference Manual covers the Command Line Interface (CLI) for the following products:

- Adit 3000 series (Adit 3104, Adit 3200, and Adit 3500)
- Multi-Service Router (MSR) Card (a service card for the Adit 600 platform)

The chapters are broken down into Modes and Configuration Groups. All commands that are listed in each group are described in the chapter.

NOTE: Throughout this manual, examples primarily reflect the Adit 3000 series. Where differences exist for the MSR card, these differences are noted.

In this Chapter

- Overview
- Command Syntax Conventions
- Command Line Interface Help
- Shortcuts

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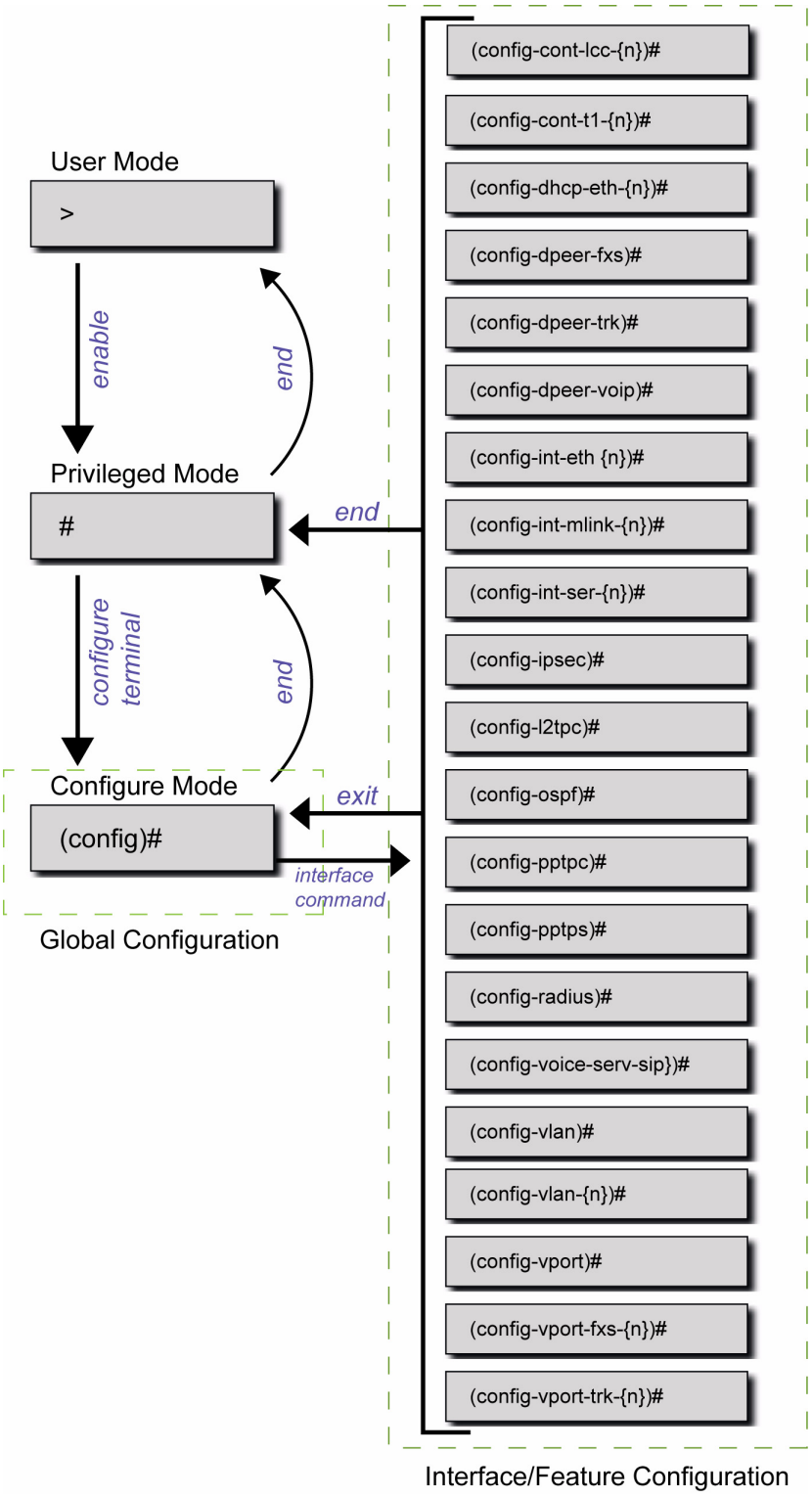
Overview

The Adit 3000/MSR CLI has three command modes, each with access to different command sets. The following displays the basic flow of the CLI.



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Prompt Identifier

When you initiate a CLI session it will open in User mode, which is indicated by the ">" prompt. At any time you can quickly determine which mode you are in by the prompt.

Command Mode	Access Method	Prompt Displayed	Exit Method
User	Login	adit 3104> adit 3200> adit 3500> adit MSR>	Use the **logout** command
Privileged	From User mode, enter the **enable** command	adit 3104# adit 3200# adit 3500# adit MSR#	Use the **exit** or **end** command.
Global Configuration	From Privileged mode, enter the **configure terminal** command.	adit 3104 (config)# adit 3200 (config)# adit 3500 (config)# adit MSR (config)#	Use the **exit** or **end** command, or press **Ctrl-z.**

User Mode

In User Mode, the operator is allowed to view only limited information (not able to modify configurations). Editing the configuration requires you to be in Privileged mode.

Privileged Mode

Privileged mode requires a password, and allows the operator to enter the Configuration mode.

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Configuration Mode

- Allows users to configure specific features/functions.
- Use the **configure terminal** command to enter from Privileged mode.
- Identified by the (config)# prompt.
  Note: As the submodes change, the words inside the parentheses are modified.
- To exit Configuration mode, type **exit** or press **Ctrl-Z**.
- Configuration mode has various submodes:

Configuration Mode	Link to Command	Prompt Displayed
Controller LCC	*controller lcc*	(config-cont-lcc-{n})#
Controller T1	*controller t1*	(config-cont-t1-{n})#
DHCP server pool	*ip dhcp pool ethernet*	(config-dhcp-eth-{n})#
Dial Peer FXS	*dial-peer voice pots fxs*	(config-dpeer-fxs)#
Dial Peer Trunk	*dial-peer voice pots trunk*	(config-dpeer-trk)#
Dial Peer VoIP	*dial-peer voice voip*	(config-dpeer-voip)#
Ethernet Interface	*interface ethernet*	(config-int-eth-{n})#
MLPPP Interface	*interface multilink*	(config-int-mlink-{n})#
Serial Interface	*interface serial*	(config-int-ser-{n})#
VPN IPSEC	*ipsec*	(config-ipsec)#
VPN L2TP Client	*l2tpc*	(config-l2tpc)#
OSPF	*router ospf*	(config-ospf)#
VPN PPTP Client	*pptpc*	(config-pptpc-{n})#
VPN PPTP Server	*pptps*	(config-pptps)#
RADIUS	*radius-client*	(config-radius)#
VLAN (Global)	*vlan (global)*	(config-vlan)#
VLAN (Port)	*vlan (vlan-id)*	(config-vlan-{n})#
Voice Port (Global)	*voice-port (global)*	(config-vport)#
Voice Port (FXS)	*voice-port fxs*	(config-vport-fxs-{n})#
Voice Port (Trunk)	*voice-port trunk*	(config-vport-trunk-{n})#
Voice Service SIP	*voice-service sip*	(config-voice-serv-sip)#

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Command Syntax Conventions

The conventions used to present command syntax are as follows:

Convention	Description
|	Vertical bars separate alternative, mutually exclusive elements. Example: (config)# **`clock source {1|2} {none|ds1 1|ds1 2|ds1 3|ds1 4}`**
[ ]	Square brackets indicate an optional element. Example: (config)# **`event-history priority [error|fatal|info|notice|warning]`**
{ }	Braces indicate a required choice. Example: (config)# **`clock {1|2} source {none|t1`** *`port`***`}`
Boldface	**Boldface** indicated commands and keywords that are entered literally as shown. In actual configuration examples and output (not general command syntax), boldface indicates commands that are manually input by the user (i.e. **show** command).
Italics	*Italics* indicates arguments for which you supply values.

Command Line Interface Help

During a CLI session, help is available.

Type a **?** at a command line, to display help on the command:

Example: **`#?`**

```
?                       Display all commands
clear                   Clear command
configure               Switch to Configure mode
copy                    Configures device database
debug                   Debug the system
end                     Exit to User mode
exit                    Exit to User mode
help                    Display all commands
history                 Display past entered commands
log                     Configure logging settings
no                      Disable a feature
reload                  Reboot the system
show                    Show various system information
upgrade                 Upgrade firmware from a local computer

#copy ?
defaults                Restores default configuration
path                    Enter path to load configuration from
running-config          Export current configuration
```


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Shortcuts

Keystroke	Description
↑ **Up Arrow**	Use the up arrow key to re-display a previously entered command. Select the up arrow repeatedly, to scroll through all the commands entered starting with the most recent.
← → **Left and Right Arrow**	Will move curser one character to the left or right.
?	The question mark will display help for the current command.
[Tab]	Select the Tab key after entering a partial (but unique) portion of the CLI command. This will result in the completion of a portion of the command and will wait for further input. Example: (config)#sn [Tab] (config)#snmp-server
auto complete	You need only enter enough letters to identify a command as unique. For example, entering cont t1 1 at the Global configuration prompt provides you access to the configuration parameters for the specified T1 interface. Entering controller t1 1 would work as well, but is not necessary.
Backspace	Erases the character to the left.
History	The history shows up to a total of 100 commands. The history command will show only the executed commands for the current mode/context.
[Ctrl+A]	Moves the curser to the beginning of the command line.
[Ctrl+E]	Moves the curser to the end of the command line.
[Ctrl+U]	Clears the current displayed command line.
[Ctrl+Z]	Exits from the current mode.

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CHAPTER 2

User Mode

User mode is the first level of commands after logging in. User mode is represented by the > prompt.

User Mode Commands

- ***date***
- ***enable***
- ***end***
- ***exit***
- ***help***
- ***history***
- ***ping***
- ***show***
- ***traceroute***

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date

Use the **date** command to display the current date.

Syntax: `> date`

Example:
```
adit 3500> date
Wed Jan 12 10:37:51 2007
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

enable

Use the **enable** command (at the User mode prompt) to enter the Privileged mode. **Note:** Once a correct password has been entered, the prompt changes from ">" to "#".

Syntax: `> enable`

Example:
```
adit 3500> enable
password: ********
adit 3500#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end

Use the **end** command to exit the current Configuration mode. Must be used to mark the end of any configuration file. **Note:** This command can be entered in any Configuration mode with the same result.

Syntax: `> end`

Example:
```
Adit 3500> end
Adit 3500 Username:admin
Adit 3500 Password:********
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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exit

Use the **exit** command to close your current connection if you are in User mode or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the previous level (example: back to Privileged mode from Interface configuration mode).

Syntax: `> exit`

Example:
```
Adit 3500> exit
Adit 3500 Username:admin
Adit 3500 Password:********
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

help

Use the **help** command to display help information. This can also be accomplished with a **?**. This command can be entered in any Configuration mode.

Syntax:
```
> help
or
> ?
```

Example:
```
Adit 3500> help

?                       Display all commands
date                    Display time/date
enable                  Enter Privileged mode
end                     Logout from the device
exit                    Exit from the current level
help                    Display all commands
history                 Display past entered commands
ping                    Ping a remote host
show                    Show various system information
traceroute              Traceroute to a remote host
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any Configuration mode.

Syntax: `> history`

Example: `Adit 3500> history`

```
date
ping 192.168.1.1 -n 4
show version
show users
show voice-port fxs
ping 192.168.1.1
show version
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ping

Use the **ping** command to send a sequence of ICMP echo request packets to the specified host. If the host variable is omitted, and you are in User mode, the router prompts you for additional information.
Note: The **ping** command verifies a connection, and is a very important troubleshooting tool.

Syntax: `> ping {address [-i time] [-l size] [-n count] [-w timeout]|stop}`

Field	Definition
address	IP address of the host to ping.
-i *time*	Specifies the intervals between pings. Range is 0 - 600000 milliseconds.
-l *size*	Specifies the size of the ping requests packets to be sent. Range 64 - 1518.
-n *count*	Specifies the number of ping requests to be sent. Range 1-1000. Default is 4.
-w *timeout*	Specifies the time to wait for a response before sending the next ping request packet. Timeout is given in seconds. Range 1-600000. Default is 2 seconds.
stop	Stop the ping process.

Example:
```
Adit 3500> ping 192.168.1.1

packet #1 has arrived
packet #2 has arrived
packet #3 has arrived
packet #4 has arrived
4 packets transmitted, 4 packets received
round-trip min/avg/max = 1/3/9 ms
```

Example:
```
Adit 3500> ping 192.168.1.1 -n 2 -l 500

packet #1 has arrived
packet #2 has arrived
2 packets transmitted, 2 packets received
round-trip min/avg/max = 2/2/2 ms
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show

show alarms
show arp
show caclkcd
show config dynamic-dns
show controller lcc
show controller t1
show dhcp-leases
show digit-map
show interface description
show interface ethernet
show interface multilink
show interface serial
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show ip ospf
show ip ospf database
show ip ospf interface
show ip ospf neighbor
show licenses
show log
show mac-address-table
show nat-fw
show port-trigger
show route
show service
show users
show version
show voice-port fxs
show voice-port trunk

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show alarms

Use the **show alarms** command to display the active alarms.

Syntax: `> show alarms [t1 port|lcc number] {alert|all|critical|info|major|minor}`

Field	Definition
t1 *port*	Display alarms for a specific port. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4.
lcc *number*	Display alarms for a specific Link Cross-Connect (LCC). **MSR:** Range = 1-8.
alert	Filter alert alarms (threshold crossing).
all	Display all alarms.
critical	Filter critical alarms.
info	Filter information alarms.
major	Filter major alarms.
minor	Filter minor alarms.

Example:

```
Adit 3500> show alarms all

Alarm                                Severity       Time
Alarm LOS T1 4                     Major          Jan  1 00:00:08 2007
Alarm LOS T1 3                     Major          Jan  1 00:00:08 2007
Alarm PRI T1 2 - Line NOT Ready  Major          Jan  1 00:00:08 2007
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show arp

Use the **show arp** command to display the ARP (Address Resolution Protocol) table.

Syntax: `> show arp {all|address|ethernet port}`

Field	Definition
all	Display entire ARP table.
address	Display ARP items of the entered IP address.
ethernet *port*	Display Ethernet ARP items only. *port* - Define an Ethernet port number. Range 1 - 2.

Example:
```
adit 3500> show arp ethernet 1
1   192.168.1.1       ether    Dynam  00:50:da:59:f0:25  eth_lan
```

Example:
```
adit 3500> show arp 192.168.1.1
ip=192.168.1.1   flags=Dynam mac=00:50:da:59:f0:25 iface=eth_lan
```

Example:
```
adit 3500> show arp all
#   IP-address        HW-type  Flags  HW-address          Iface
1   192.168.1.1       ether    Dynam  00:50:da:59:f0:25   eth-1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show caclkcd

Use the **show caclkcd** command to display the linux kernel crash dump

Syntax: **> show caclkcd**

Example: **Adit 3500> show caclkcd**

```
 ----------------  Begin cacLKCD  -----------
Jan  1 2003 00:00:44 <3> openrg: unhandled page fault at pc=0x400528c0, lr=0x400
digit-map              Show digit-map settings
52890 (bad address=0x30303038, code 245)Show various interfaces
pc : [<400528c0>]    lr : [<40052890>]    No        Show l
r7 : 4006bb9c  r6 : 30303038  r5 : 4006bb9c  r4 : 4006bc1c
port-trigger
r3 : 30303030  r2 : 4006bc1c  r1 : 4006bba5  r0 : 00000000
route                  Show routing table
Flags: nzCv  IRQs on  FIQs on  Mode USER_32  Segment user   Map the configurations to
CLI commands
User-mode stack:(0xbffffbac to 0xc0000000)
service                Display services
fba0:         00000001 0036d238 003704d0 0036d238 003704d0theirprivilages
versio
fbc0: 003704d4 0002e1e0 00000001 003704d0 0002e1a8 00000004 00000005 000281d4
voice-port             Show voice-port
fbe0: 4006d24d 4006d24c 4006d24c ffffffff 00000000 00rt            Show
fce0:00024324 00469c08 00000001 00025144 00469c08 00469c08 0009575c 40050458ipaddress
Alarm LOS T1#2
fd00: 002c85a0 000001e3 40e88bc0 00000000 00000000 00000000 0009574c 0036c448
exit
fd60: 0036e270 00000000 00000000 00000004 00000094 bffffdbc 00000004 40033490
fd80: 00000000 00000000 00000000 00000094 0011121c 0000008c bffffdbc 00263674
fda0: 00000bfd 0000008c 0011138c ffffffff ffffffff 00000007 00111c44 feedbabe
fdc0: 00001063 00033bb6 0000004e 00000000 00000023 002c81e8 4006b010 400335dc
fde0: 00000000 00000000 00000000 002c8188 401a430c 002c8188 00000023 002c81e8
fe00: 001df753 00000000 401a4494 4003f960 001df753 001df730 002c8188 001df753
fe20: 001df730 4006b010 401a5ae4 00000023 001df730 00000000 00000000 00000000
fe40: 00000000 00000000 0000009c 00000000 065ca5ac 00000002 0000009c 00000000
fe60: 057aacc3 00000000 00000000 40047924 00000020 401bb254 40032cf0 4002ead4
fe80: 00000020 400054d0 0000009c 00000000 05a4faa0 00000002 400051a8 0000c222
fea0: 00000000 40000ca4 00000000 00000000 00000000 400051a8 0000938c 00000000
fec0: 00000039 00282fac 0000bc4c 4000c848 00000000 40000ca4 bfffff34 bfffff3c
fee0: 00000001 00000704 bfffff3c 00000001 bfffff30 00000000 00000000 4006b010
ff00: 00000000 40051048 bfffff34 401bb458 0001f828 401967e4 00000000 00000000
ff20: 0001145c 00000000 40196814 00000000 00011474 bffffd2 00000000 bffffde
ff40: bffffe5 00000000 00000010 00000097 00000006 00001000 00000011 00000064
ff60: 00000003 00008034 00000004 00000020 00000005 00000006 00000007 40000000
ff80: 00000008 00000000 00000009 0001145c 0000000b 00000000 0000000c 00000000
ffa0: 0000000d 00000000 0000000e 00000000 0000000f bffffce 00000000 00000000
ffc0: 00000000 00000000 00000000 00007635 62002f62 696e2f6f 70656e72 6700484f
ffe0: 4d453d2f 00544552 4d3d6c69 6e757800 2f62696e 2f6f7065 6e726700 00000000
 ----------------  End cacLKCD    -----------
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config dynamic-dns

Use the **show config dynamic-dns** command to display the dynamic DNS configuration.

Syntax: `> show config dynamic-dns`

Example: `Adit 3500> show config dynamic-dns`

```
dynamic-dns username admin hostname Host1
dynamic-dns interface eth-2
no dynamic-dns offline enable
no dynamic-dns wildcard enable
no dynamic-dns backup-mx enable
no dynamic-dns mail-exchanger
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show controller lcc

Use the **show controller lcc** command to display the settings for a Link Cross Connect on the MSR card.

Syntax: `> show controller lcc` *number*

Field	Definition
number	Link Cross Connect number, 1-8.

Example: `Adit MSR> show controller lcc 1`

```
Settings for interface LCC 1
----------------------------
Name              : LinkCC 1
Device Name       : LinkCC 1
Status            : Operational
Network           : WAN
Connection Type   : Link Cross Connect
Connection        : Data
Alarm Reporting   : Enabled
```

Supported Platforms: **MSR**

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show controller t1

Use the **show controller t1** command to display the performance statistics of the DS1.

Syntax: **`> show controller t1`** *port*

Field	Definition
port	DS1 (T1) interface. Adit 3104 range = 1 Adit 3500 range 1-4

Example: **`Adit 3500> show controller t1 1`**

```
Settings for interface T1 1
---------------------------
Interface name    : T1 1
Transmit status   : Up
Receive status    : Up
Framing           : ESF
Clock source      : Clock Reference 1
Line Code         : B8ZS
Loop Detection    : OFF
FDL Type          : NONE
Line Length       : DSX-1 equalization for 0-133ft
Status            : Connected


Performance Threshold Settings           15 min          1 day
                                         ------          -----
unavailable seconds (uas):               0               0
severely errored seconds (ses):          0               0
errored seconds (es):                    0               0
severely errored frame seconds (sefs):   0               0
line errored seconds (les):              0               0
controlled slip seconds (css):           0               0
bursty errored seconds (bes):            0               0
degraded minutes (dm):                   0               0
line code violations (lcv):              0               0
path code violations (pcv):              0               0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**
Not supported on the MSR

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show dhcp-leases

Use the **show dhcp-leases** command to display the DHCP lease table.

Syntax: `> show dhcp-leases`

Example:

```
Adit 3500> show dhcp-leases

Ethernet 1

Hostname : new-host IP:192.168.1.10 MAC:00:00:ff:ff:00:00
Type:static Expires-In:0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show digit-map

Use the **show digit-map** command to display the Digit Map settings.

Syntax: `> show digit-map`

Example:

```
Adit 3500> show digit-map

Index   Pattern
-----------------------------------------------------------------
1        [2-9]11
2        [0-1][2-9]11
3        0[#T]
4        00
5        *xx
6        011x.[#T]
7        [0-1]xxxxxxx[#T]
8        [0-1][2-9]xxxxxxxxx
9        [2-9]xxxxxxxxx
10       [2-9]xxxxxx[#T]
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show interface description

Use the **show interface description** command to display interface information.

Syntax: `> show interface description`

Example: `Adit 3500> show interface description`

```
Device        State       IP/Mask                        Dependencies
 T1 1          running                                    None
 T1 2          running                                    None
 T1 3          up                                         None
 T1 4          up                                         None
 Serial 1      up          0.0.0.0/255.255.255.255        T1 1
 Ethernet 2    disabled    0.0.0.0/0.0.0.0                None
 Ethernet 1    running     192.168.1.1/255.255.255.0      None
 IPsec 0       disabled    0.0.0.0/0.0.0.0                Serial 1
 IPsec 1       running     192.168.1.1/255.255.255.0      Ethernet 1
```

Example: `Adit MSR> show interface description`

```
Device        State       IP/Mask                        Dependencies
 LinkCC 1      running                                    None
 LinkCC 2      running                                    None
 LinkCC 3      down                                       None
 LinkCC 4      down                                       None
 LinkCC 5      down                                       None
 LinkCC 6      down                                       None
 LinkCC 7      down                                       None
 LinkCC 8      down                                       None
 Ethernet 2    up          DHCP Unassigned                None
 Ethernet 1    running     192.168.1.1/255.255.255.0      None
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show interface ethernet

Use the **show interface ethernet** command to display the Ethernet interface information.

Syntax: **`> show interface ethernet`** *port*

Field	Definition
port	Ethernet port number. Range = 1-2.

Example: **`Adit 3500> show interface ethernet 1`**

```
Device=Ethernet 1   State=running   IP/Mask=192.168.1.1/255.255.255.0
         Dependency=None
  Status: Connected;  Link: 10T-HD
  Tx (Packets/Bytes/Dropped/Errors)=(1620/1643674/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(1636/143050/0/0)
  Broadcasts (Tx/Rx)=(0/0)  Multicasts=0  Collisions=0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show interface multilink

Use the **show interface multilink** command to display the multilink configuration information.

Syntax: **`> show interface multilink`** *port*

Field	Definition
port	Multilink port number. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range is 1-8

Example: **`Adit 3500> show interface multilink 1`**

```
Device=mlink-1      State=down      IP/Mask=Unnumbered
         Dependency=t1-1,t1-3
  Status: Disconnected
```

Example: **`Adit MSR> show interface multilink 1`**

```
Device=mlink-1      State=down      IP/Mask=Unnumbered
         Dependency=LCC1,LCC2
  Status: Disconnected
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show interface serial

Use the **show interface serial** command to display the configuration of the serial interface.

Syntax: **`> show interface serial`** *port*

Field	Definition
port	Serial interface. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.

Example: **`Adit 3500> show interface serial 3`**

```
Device=Serial 1     State=up        IP/Mask=0.0.0.0/255.255.255.255
         Dependency=T1 1
  Status: Reconnecting...
  Tx (Packets/Bytes/Dropped/Errors)=(3332/39984/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
```

Example: **`Adit MSR> show interface serial 3`**

```
Device=Serial 1     State=up        IP/Mask=0.0.0.0/255.255.255.255
         Dependency=LCC1
  Status: Reconnecting...
  Tx (Packets/Bytes/Dropped/Errors)=(3332/39984/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show interface stats

Use the **show interface stats** command to display the interface statistics.

Syntax: `> show interface stats`

Example: `Adit 3500> show interface stats`

```
Device=T1 1         State=up                                        Dependency=None     Status: Connecting (Alarm Condition)
Device=T1 2         State=up                                        Dependency=None     Status: Connecting (Alarm Condition)
Device=T1 3         State=running                                   Dependency=None     Status: Connected
Device=T1 4         State=running                                   Dependency=None     Status: Connected
Device=Serial 1     State=down      IP/Mask=0.0.0.0/255.255.255.255 Dependency=T1 1     Status: Disconnected
Device=Ethernet 2   State=disabled  IP/Mask=192.168.2.10/255.255.255.0 Dependency=None
Device=Ethernet 1   State=running   IP/Mask=192.168.1.35/255.255.255.0 Dependency=None  Status: Connected;  Link: 10T-HD
                    Tx (Packets/Bytes/Dropped/Errors)=(2362/2498024/0/0)
                    Rx (Packets/Bytes/Dropped/Errors)=(2211/210493/0/0)
                    Broadcasts (Tx/Rx)=(0/0)  Multicasts=0  Collisions=0
Device=IPsec 0      State=disabled  IP/Mask=0.0.0.0/0.0.0.0         Dependency=Serial 1
Device=IPsec 1      State=running   IP/Mask=192.168.1.35/255.255.255.0 Dependency=Ethernet 1Status: Connected
                    Tx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
                    Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
```

Example: `Adit MSR> show interface stats`

```
Device=LinkCC 1       State=running
        Dependency=None

 Status: Operational
Device=LinkCC 2       State=running
        Dependency=None

 Status: Operational
Device=LinkCC 3       State=down
        Dependency=None

 Status: Unassigned
Device=LinkCC 4       State=down
        Dependency=None

 Status: Unassigned
Device=LinkCC 5       State=down
        Dependency=None

 Status: Unassigned
Device=LinkCC 6       State=down
        Dependency=None

 Status: Unassigned
Device=LinkCC 7       State=down
        Dependency=None
```


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```
 Status: Unassigned
Device=LinkCC 8       State=down
        Dependency=None

 Status: Unassigned
Device=Ethernet 2     State=up        IP/Mask=DHCP Unassigned
        Dependency=None

 Status: DHCP IP Address Released;  Link: Down
 Tx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
 Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
 Broadcasts (Tx/Rx)=(0/0)  Multicasts=0  Collisions=0
Device=Ethernet 1     State=running   IP/Mask=10.0.0.3/255.255.255.0
        Dependency=None

 Status: Connected;  Link: 10T-HD
 Tx (Packets/Bytes/Dropped/Errors)=(1509/1577037/0/0)
 Rx (Packets/Bytes/Dropped/Errors)=(1540/119409/0/0)
 Broadcasts (Tx/Rx)=(0/0)  Multicasts=0  Collisions=0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf

Use the **show ip ospf** command to display the general OSPF routing process information.

Syntax: **> show ip ospf**

Example: **adit 3500> show ip ospf**

```
Routing Process "ospf 0" with ID 192.168.1.1
Process uptime is 28 minutes
Process bound to VRF default
Conforms to RFC2328, and RFC1583Compatibility flag is disabled
Supports only single TOS(TOS0) routes
Supports opaque LSA
Supports Graceful Restart
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Refreshtimer 10 secs
Number of incoming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 0. Checksum 0x000000
Number of opaque AS LSA 0. Checksum 0x000000
Number of router LSA 0
Router LSA database is unlimited.
Number of network LSA 0
Network LSA database is unlimited.
Number of non-default summary LSA 0
Summary LSA database is unlimited.
Number of asbr summary LSA 0
ASBR Summary LSA database is unlimited.
Number of non-default external LSA 0
External LSA database is unlimited.
Number of LSA originated 0
Number of LSA received 0
Number of areas attached to this router: 0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf database

Use the **show ip ospf database** command to display information related to the OSPF database for a specific router. The various forms of this command deliver information on defined OSPF link state advertisements.

Syntax: **> show ip ospf database {setting}**

Syntax: **> show ip ospf database {adv-router** *address*|**self-originate}**

Syntax: **> show ip ospf database network** *link-state-id*

Syntax: **> show ip ospf database router {***link-state-id*|**adv-router** *address*|**self-originate}**

Syntax: **> show ip ospf database summary [***link-state-id***] [adv-router** *address*|**self-originate]**

Field	Definition
adv-router *address*	Displays all the LSAs of the specified router. If no IP address is entered, the local router information will be displayed (same as **self-originate**).
link-state-id	Portion of the Internet environment that is being described by the advertisement. The value entered depends on the advertisement's LS type. It must be entered in the form of an IP address. When the link state advertisement is describing a network, the link-state-id can take one of two forms: 1. The network's IP address (as in type 3 summary link advertisements and in autonomous system external link advertisements). 2. A derived address obtained from the link state ID. (Note that masking a network links advertisement's link state ID with the network's subnet mask yields the network's IP address.) When the link state advertisement is describing a router, the link state ID is always the described router's OSPF router ID. When an autonomous system external advertisement (LS Type = 5) is describing a default route, its link state ID is set to Default Destination (0.0.0.0).
network	Displays information only about the network LSAs.
router	Displays information only about the Router LSAs.
self-originate	Displays only self-originated LSAs (from the local router).
summary	Displays information on.ly about the summary LSAs.

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Example: **adit 3500> show ip ospf database**

```
                Router Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum  Link count
192.168.3.1     192.168.3.1      313 0x800000c1 0x4978 1
192.168.3.255   192.168.3.255    568 0x8000003a 0xa6c0 1

                Net Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum
192.168.3.251   192.168.3.255    388 0x80000003 0xbcec
```

Example: **adit 3500> show ip ospf database self-originate**

```
Router Link States (Area 0.0.0.1)
Link ID ADV Router Age Seq# CkSum Link count
192.168.3.255 192.168.3.255 420 0x8000003a 0xa6c0 1
Net Link States (Area 0.0.0.1)
Link ID ADV Router Age Seq# CkSum
192.168.3.251 192.168.3.255 240 0x80000003 0xbcec
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf interface

Use the **show ip ospf interface** command to display OSPF related interface information.

Syntax: **`> show ip ospf interface {ethernet`** *`port`*`|`**`serial`** *`port`*`|`**`multilink`** *`port`*`}`

Field	Definition
ethernet *port*	Display information on the Ethernet interface. **port** = 1 or 2
serial *port*	Display information on the serial interface. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.
multilink *port*	Display information on the Multilink interface. **Adit 3104, Adit 3500, MSR:** Value must be 1

Example: **`adit 3500> show ip ospf interface ethernet 1`**

```
Ethernet 1 is up, line protocol is up
Internet Address 192.168.254.202, Mask 255.255.255.0, Area 0.0.0.0
AS 201, Router ID 192.168.99.1, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State OTHER, Priority 1
Designated Router id 192.168.254.10, Interface address 192.168.254.10
Backup Designated router id 192.168.254.28, Interface addr 192.168.254.28
Timer intervals configured, Hello 10, Dead 60, Wait 40, Retransmit 5
Hello due in 0:00:05
Neighbor Count is 8, Adjacent neighbor count is 2
  Adjacent with neighbor 192.168.254.28  (Backup Designated Router)
  Adjacent with neighbor 192.168.254.10  (Designated Router)
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf neighbor

Use the **show ip ospf neighbor** command to display OSPF neighbor information.

Syntax: **> show ip ospf neighbor [interface** *address*|*neighbor-id*|**detail]**

Field	Definition
interface *address*	Optional parameter. Enter interface IP address to define display.
neighbor-id	Optional parameter. Enter neighbor IP address to define display.
detail	Optional parameter. Enable display of detailed information.

Example: **adit 3500> show ip ospf neighbor**

```
   ID           Pri    State         Dead Time     Address          Interface
10.199.199.137  1     FULL/DR        0:00:31    192.168.80.37      Ethernet1
172.16.48.1     1     FULL/DROTHER   0:00:33    172.16.48.1        Fddi0
172.16.48.200   1     FULL/DROTHER   0:00:33    172.16.48.200      Fddi0
10.199.199.137  5     FULL/DR        0:00:33    172.16.48.189      Fddi0
```

Example: **adit 3500> show ip ospf neighbor 10.199.199.137**

```
   Neighbor 10.199.199.137, interface address 192.168.80.37
    In the area 0.0.0.0 via interface Ethernet0
    Neighbor priority is 1, State is FULL
    Options 2
    Dead timer due in 0:00:32
    Link State retransmission due in 0:00:04
 Neighbor 10.199.199.137, interface address 172.16.48.189
    In the area 0.0.0.0 via interface Fddi0
    Neighbor priority is 5, State is FULL
    Options 2
    Dead timer due in 0:00:32
    Link State retransmission due in 0:00:03
```

Example: **adit 3500> show ip ospf neighbor detail**

```
  Neighbor 192.168.5.2, interface address 10.225.200.28
    In the area 0 via interface GigabitEthernet1/0/0
    Neighbor priority is 1, State is FULL, 6 state changes
    DR is 10.225.200.28 BDR is 10.225.200.30
    Options is 0x42
    LLS Options is 0x1 (LR), last OOB-Resync 00:03:08 ago
    Dead timer due in 00:00:36
    Neighbor is up for 00:09:46
   Index 1/1, retransmission queue length 0, number of retransmission 1
    First 0x0(0)/0x0(0) Next 0x0(0)/0x0(0)
    Last retransmission scan length is 1, maximum is 1
    Last retransmission scan time is 0 msec, maximum is 0 msec
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show licenses

Use the **show licenses** command to display all enabled feature keys.

Syntax: `> show licenses`

Example: `Adit 3500> show licenses`

```
VPN   license = No
SIP   license = Yes
MGCP  license = No
G729A license = Yes
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show log

Use the **show log** command to display the current events on the system.

Syntax: `> show log {firewall|pri|sip|system|t1` *port*`|lcc` *number*`}` `{`*severity*`}`

Field	Definition
firewall	Filter firewall alarms
pri	Display PRI logs. **Note:** This is not supported on the Adit 3104.
sip	Display SIP logs.
system	Filter general system alarms
t1 *port*	Display event log for a specific T1 port. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4.
lcc *number*	Display event log for a specific Link Cross-Connect (LCC). **MSR:** Range = 1-8.
severity	**alert** - Filter alert alarms (threshold crossing) **all** - Display all alarms **critical** - Filter critical alarms (service affecting) **info** - Filter informational alarms **major** - Filter major alarms (service affecting) **minor** - Filter minor alarms (non-service affecting)

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Example: **`Adit 3500> show log t1 1 minor`**

```
System Log      Message Jan  1 00:00:08 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:00:04 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 01:19:13 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:57:12 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:52 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:34 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:09 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:00:04 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show mac-address-table

Use the **show mac-address-table** command to display the current MAC addresses (LAN\WAN).

Syntax: **`> show mac-address-table`**

Example: **`Adit 3500> show mac-address-table`**

```
Ethernet 1 mac= 00:00:00:ff:ff:ff
Ethernet 2 mac= 00:00:00:ff:ff:fd
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show nat-fw

Use the **show nat-fw** command to display the current NAT and firewall connection table.

Syntax: **> show nat-fw**

Example: **Adit 3500> show nat-fw**

```
Number  Content
1        TCP 11.0.0.4        36104<--> 172.15.16.1     36104[31.0.0.6 5516 ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1320 pkts 7 ppp100 Outgoing BY FTP

2        TCP 11.0.0.4        36103<--> 172.15.16.1     36103[31.0.0.6 21   ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1182 pkts 20 FTP child: Yes ppp100 Outgoing

3        TCP 11.0.0.4        36102<--> 172.15.16.1     36102[31.0.0.6 5515 ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1320 pkts 7 ppp100 Outgoing BY FTP

4        TCP 11.0.0.4        36101<--> 172.15.16.1     36101[31.0.0.6 21   ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1182 pkts 20 FTP child: Yes ppp100 Outgoing

5        UDP 172.15.16.2     28015<--> 172.15.16.2     28015[*.*.*.*       *]
ttl 79 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP

6        UDP 172.15.16.2     28014<--> 172.15.16.2     28014[*.*.*.*       *]
ttl 79 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP

7        UDP 172.15.16.2     28013<--> 172.15.16.2     28013[*.*.*.*       *]
ttl 77 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP

8        UDP 172.15.16.2     28012<--> 172.15.16.2     28012[*.*.*.*       *]
ttl 77 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP

9        UDP 172.15.16.2     28011<--> 172.15.16.2     28011[*.*.*.*       *]
ttl 75 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP

10       UDP 172.15.16.2     28010<--> 172.15.16.2     28010[*.*.*.*       *]
ttl 75 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show port-trigger

Use the **show port-trigger** command to display all port triggering information.

Syntax: `> show port-trigger`

Example: `Adit 3500> show port-trigger`

```
Service ID:134217730    Enable     Service Name:L2TP
Trigger protocol: UDP   port: src_start=0       src_end=0       dst_start=1701      dst_end=1701

Service ID:16777223     Enable     Service Name:TFTP
Trigger protocol: UDP   port: src_start=1024    src_end=65535    dst_start=69    dst_end=69
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show route

Use the **show route** command to display the routing table.

Syntax: `> show route`

Example: `Adit 3500> show route`

```
Destination         Gateway             Flags    Metric     Interface
 192.168.1.0/24      *                   U        50         Ethernet 1
 192.168.1.0/24      *                   U        51         IPsec 1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show service

Use the **show service** command to displays all services.

Syntax: `> show service`

Example: `Adit 3500> show service`

```
Group:  Basic Web Utilities
Service ID:16777216     Service Name:All Traffic
Trigger protocol: NO PROTOCOL port: src_start=0       src_end=0       dst_start=0       dst_end=0

Service ID:16777217     Service Name:DNS
Trigger protocol: TCP   port: src_start=53      src_end=53      dst_start=53      dst_end=53

Service ID:16777217     Service Name:DNS
Trigger protocol: TCP   port: src_start=1024    src_end=65535   dst_start=53      dst_end=53

Service ID:16777217     Service Name:DNS
Trigger protocol: UDP   port: src_start=53      src_end=53      dst_start=53      dst_end=53

Service ID:16777217     Service Name:DNS
Trigger protocol: UDP   port: src_start=1024    src_end=65535   dst_start=53      dst_end=53

Service ID:16777218     Service Name:FTP
Trigger protocol: TCP   port: src_start=0       src_end=0       dst_start=21      dst_end=21

Service ID:16777219     Service Name:HTTP
.
.
.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show users

Use the **show users** command to displays all users on this system.

Syntax: **> show users**

Example: **Adit 3500> show users**

```
Provisioned User List
  User-1 : admin   Access: ADMIN  <-
  User-2 : pauljones Access: ADMIN
 Active CLI Users
  User-1 : admin   Access:ADMIN     Authen:Config  from IP:192.168.1.1
  User-2 : admin   Access:ADMIN     Authen:Config  from Console
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show version

Use the **show version** command to displays the version for the hardware, software and firmware. The Admin level user will be provided with more information than Manager and Monitor levels. Software features are listed along with enabled status.

Syntax: **> show version**

Example: **Adit 3500> show version**

```
Application Version: 1.4.0
Compilation Time: Thu Jul 20 2006 13:48:42
FPGA Version: 1.0.0
Board Version: 1 003-1215-0100
IXP400 Software Release: 1_4 SQA4_1
MSP:
    82530 - 60 channels
    Image File Name: TGW_v5_03_cdma.axf
    API Version    : 2.1.0
    Source IP Addr : 192.168.1.1
Voice Slot 1 : FXS Card Present: Rev  5.00 VIP
Vendor: Turin Networks
CLEI Code: IPMHX00LRA
Product Features:
 SIP  enabled.
 G729A enabled.
```


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Example: **Adit MSR> show version**

```
Application Version: 2.0.0.5
Compilation Time: Thu Jan 31 2008 13:48:42
FPGA Version: 0.04
Boot Version: 1.14
Board Version: 0 003-1756-0001
Flash Size: 32M bytes
Memory Size: 64M bytes
IXP400 Software Release: 1_4 SQA4_1
MSP:
    82610 - 100 channels
    Image File Name: TGW_v5_05.axf
    API Version    : 2.1.0
    Source IP Addr : 10.10.4.202
MSR Card Slot: 5
CLEI Code: SITRAANBAA
Product Features:
 VPN  enabled.
 SIP  enabled.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show voice-port fxs

Use the **show voice-port fxs** command to display the FXS interface information.

Syntax: **> show voice-port fxs**

Example: **Adit 3500> show voice-port fxs**

```
Registration Address: 172.32.1.15
SIP Proxy: Yes
Proxy Address: 172.32.1.18

* Line UID            PhoneStatus RegisStatus RX/TX/Lost(Pkts) Jitter Overflow
-------------------------------------------------------------------------------
Y 1    3035550001     Idle        Registered
Y 2    3035550002     Idle        Registered
Y 3    3035550003     Idle        Registered
Y 4    3035550004     Idle        Registered
```

Example: **Adit MSR> show voice-port fxs**

```
Registration Address: 172.32.1.15
SIP Proxy: Yes
Proxy Address: 172.32.1.18

* Line UID            PhoneStatus RegisStatus RX/TX/Lost(Pkts) Jitter Overflow CrossConnect
-------------------------------------------------------------------------------------------
Y 1    3035550001     Idle        Registered                                   Connected
Y 2    3035550002     Idle        Registered                                   Connected
Y 3    3035550003     Idle        Registered                                   Connected
Y 4    3035550004     Idle        Registered                                   Connected
Y 5    3035550005     Idle        Registered                                   Connected
Y 6    3035550006     Idle        Registered                                   Connected
Y 7    3035550007     Idle        Registered                                   Connected
Y 8    3035550008     Idle        Registered                                   Connected
.
.
.
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show voice-port trunk

Use the **show voice-port trunk** command to display the voice trunk statistics.

Syntax: **`> show voice-port trunk`** *port*

Field	Definition
port	**Adit 3500:** DS1 (T1) interface. Value must be 1. **MSR:** Link Cross Connect (LCC). Range = 1-8.

Example: **`Adit 3500> show voice-port trunk 1`**

```
 trunk-1 t1-1 does not exist
*******************************  CAS 2  ************************************
Channel no   Internal Call Id   Q931 Connection Id   Tdm TimeSlot   Call State
-------------------------------------------------------------------------------
 1             -1                  -1                -1             INACTIVE
 2             -1                  -1                -1             INACTIVE
 3             -1                  -1                -1             INACTIVE
 4             -1                  -1                -1             INACTIVE
 5             -1                  -1                -1             INACTIVE
 6             -1                  -1                -1             INACTIVE
 7             -1                  -1                -1             INACTIVE
 8             -1                  -1                -1             INACTIVE
 9             -1                  -1                -1             INACTIVE
10             -1                  -1                -1             INACTIVE
11             -1                  -1                -1             INACTIVE
12             -1                  -1                -1             INACTIVE
13             -1                  -1                -1             INACTIVE
14             -1                  -1                -1             INACTIVE
15             -1                  -1                -1             INACTIVE
16             -1                  -1                -1             INACTIVE
17             -1                  -1                -1             INACTIVE
18             -1                  -1                -1             INACTIVE
19             -1                  -1                -1             INACTIVE
20             -1                  -1                -1             INACTIVE
21             -1                  -1                -1             INACTIVE
22             -1                  -1                -1             INACTIVE
23             -1                  -1                -1             INACTIVE
24             -1                  -1                -1             INACTIVE
 trunk-1 t1-3 does not exist
 trunk-1 t1-4 does not exist
```


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Example: **Adit MSR> show voice-port trunk 1**

```
*******************************  PRI 1  ************************************
Channel no   Internal Call Id   Q931 Connection Id   Tdm TimeSlot   Call State
--------------------------------------------------------------------------------
 1             -1                  -1                -1             INACTIVE
 2             -1                  -1                -1             INACTIVE
 3             -1                  -1                -1             INACTIVE
 4             -1                  -1                -1             INACTIVE
 5             -1                  -1                -1             INACTIVE
 6             -1                  -1                -1             INACTIVE
 7             -1                  -1                -1             INACTIVE
 8             -1                  -1                -1             INACTIVE
 9             -1                  -1                -1             INACTIVE
10             -1                  -1                -1             INACTIVE
11             -1                  -1                -1             INACTIVE
12             -1                  -1                -1             INACTIVE
13             -1                  -1                -1             INACTIVE
14             -1                  -1                -1             INACTIVE
15             -1                  -1                -1             INACTIVE
16             -1                  -1                -1             INACTIVE
17             -1                  -1                -1             INACTIVE
18             -1                  -1                -1             INACTIVE
19             -1                  -1                -1             INACTIVE
20             -1                  -1                -1             INACTIVE
21             -1                  -1                -1             INACTIVE
22             -1                  -1                -1             INACTIVE
23             -1                  -1                -1             INACTIVE
 trunk 1 LCC#2 does not exist
 trunk 1 LCC#3 does not exist
 trunk 1 LCC#4 does not exist
 trunk 1 LCC#5 does not exist
 trunk 1 LCC#6 does not exist
 trunk 1 LCC#7 does not exist
 trunk 1 LCC#8 does not exist
```

Supported Platforms: **Adit 3500, MSR**

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traceroute

Use the **traceroute** command to trace a route to a remote host.

Syntax: `> traceroute`

Syntax: `> traceroute {address|hostname|stop}`

Field	Definition
address	IP address of the remote host.
hostname	Host name of the remote host.
stop	Stop the traceroute process.

Example:

```
Adit 3500> traceroute to 192.168.1.200
(192.168.1.200), 10 hops max
1 192.168.1.200 (192.168.1.200) 10.500 ms 1.013 ms 0.926 ms
Traceroute: Destination Reached
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 3

Privileged Mode

The Privileged Mode allows the operator access to the configuration modes.

This Mode is entered with the **> enable** command from the Basic mode.

The Privileged Mode is represented by the # prompt.

Privileged Mode Commands

- ***clear***
- ***configure terminal***
- ***copy***
- ***date***
- ***debug***
- ***end***
- ***exit***
- ***help***
- ***history***
- ***log clear***
- ***no debug***
- ***ping***
- ***reload***
- ***show***
- ***traceroute***
- ***upgrade***

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clear

clear arp

Use the **clear arp** command to clear the ARP (Address Resolution Protocol) table.

Syntax: `# clear arp {all|ethernet port|address}`

Field	Definition
all	Display entire ARP table.
ethernet *port*	Display Ethernet ARP items only. *port* - Define an Ethernet port number. Range 1 - 2.
address	Enter IP address for specific ARP information on this address.

Example:
```
adit 3500# clear arp ethernet 1
arp entries removed on eth-1 interface
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

clear caclkcd

Use the **clear arp** command to clear the linux kernel crash dump.

Syntax: `# clear caclkcd`

Example: `adit 3500# clear caclkcd`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

clear ip ospf process

Use the **clear ip ospf process** command to restart the OSPF process with the LSA databases and counters reinitialized.

Syntax: `# clear ip ospf process`

Example: `adit 3500# clear ip ospf process`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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configure terminal

Use the **configure terminal** command to enter the configuration mode.

Syntax: `# configure terminal`

Example:
```
adit 3500# configure terminal
adit 3500 (config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

copy

copy defaults

Use the **copy defaults** command to restore default setting.

Syntax: `# copy defaults running-config`

Example:
```
adit 3500# copy defaults running-config
Going to reboot!
Restarting system.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

copy path

Use the **copy path** command to load a configuration saved on your computer to the Adit system.
Note: A TFTP server must be running on your computer.

Syntax: `# copy path {source-path} running-config`

Field	Definition
source-path	Enter the source path, in the form tftp://*address*/*filename* ***address*** - Enter IP address of the TFTP server. ***filename*** - Enter the name of the configuration file to load onto the system.

Example:
```
adit 3500# copy path tftp://192.168.1.100/a3500_config running-config
adit 3500#Configuration restore: Success
WARNING: A reload is needed for changes to take effect.
```


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Example: `Adit MSR#copy path tftp://192.168.1.100/MSR_config running-config`

`Adit MSR#Configuration restore: Success.`

`WARNING: A reload is needed for changes to take effect.`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

copy running-config

Use the **copy running-config** command to save the current configuration on the Adit.
Note: The TFTP server must be running on the destination device.

Syntax: `# copy running-config path {destination-path}`

Field	Definition
destination-path	Enter the destination path, in the form tftp://*address*/*filename* to the location where the configuration file is to be saved. ***address*** - Enter IP address of the TFTP server. ***filename*** - Enter a name for this new configuration file.

Example:
```
adit 3500# copy running-config path tftp://192.168.1.100/
a3500_config

adit 3500# Configuration save: Success
```

Example:
```
Adit MSR#copy running-config path tftp://192.168.1.100/
testconfig

Adit MSR#Configuration save: Success
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

date

Use the **date** command to display the current date.

Syntax: `# date`

Example:
```
Adit 3500# date
Wed Jan 12 10:37:51 2007
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug

debug portmon all

Use the **debug portmon all** command allows the user to monitor all traffic of a specific type. All traffic can be displayed, or a specific traffic type can be defined. **Note:** Immediately after this command is issued, any traffic that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug portmon** command. See *no debug portmon* command on page 3-16.

Syntax: **`# debug portmon all [all|arp`** *`address`*`|`**`bootp`** *`address`*`|`**`control|data|dns`** *`address`*`|`**`icmp`** *`address`*`|`**`ip`** *`address`*`|`**`link|mgcp`** *`address`*`|`**`rip`** *`address`*`|`**`sip`** *`address`*`|`**`stp|tcp {`***`address`***`|`***`address`***`:`***`port`***`|`***`port`***`}|`**`udp {`***`address`***`|`***`address`***`:`***`port`***`|`***`port`***`}]`**

Field	Definition
Filters all traffic of the following type.	
all	Allows all traffic.
arp	Displays all Address Resolution Protocol traffic. ***address*** = IP address of the interface.
bootp	Displays BootP related traffic. ***address*** = IP address of the interface.
control	Displays control related traffic.
data	Displays data related traffic.
dns	Displays Domain Naming Service related traffic. ***address*** = IP address of the interface.
icmp	Displays Internet Control Message Protocol related traffic. ***address*** = IP address of the interface.
ip	Displays Internet Protocol related traffic **Note:** Requires an IP address. ***address*** = IP address of the interface.
link	Displays link related traffic.
mgcp	Displays Media Gateway Control Protocol related traffic. ***address*** = IP address of the interface.
rip	Displays Routing Information Protocol related traffic. ***address*** = IP address of the interface.
sip	Displays Session Initiation Protocol related traffic. ***address*** = IP address of the interface.
stp	Displays Spanning Tree Protocol related traffic.
tcp	Displays Transmission Control Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address ***port*** = Port of the interface
udp	Displays User Datagram Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address:port of the interface. ***port*** = Port of the interface

Example: **`adit 3500# debug portmon all rip 192.168.1.20`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon {rx|tx|both}

Use the **debug portmon {rx|tx|both}** command allows the user to monitor specific direction of traffic.
Note: Immediately after this command is issued, any traffic that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug portmon** command. See *no debug portmon* command on page 3-16.

Syntax: `# debug portmon {rx|tx|both}`

Field	Definition
both	Display both receive and transmit information.
rx	Display the receive direction.
tx	Display the transmit direction.

Example: `adit 3500# debug portmon both`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

debug portmon detail

Use the **debug portmon detail** command allows the user to configure the portmon to display brief information or detailed. See *no debug portmon* command on page 3-16.

Syntax: `# debug portmon detail {off|on}`

Field	Definition
off	Disables detail packet display
on	Enable detailed packet display

Example: `adit 3500# debug portmon detail on`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon ethernet

Use the **debug portmon ethernet** command allows the user to monitor specific Ethernet traffic. **Note:** Immediately after this command is issued, any traffic that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug portmon** command. See *no debug portmon* command on page 3-16.

Syntax: **`# debug portmon ethernet {1|2|both} [all|arp`** *`address`*`|`**`bootp`** *`address`*`|`**`control|data|dns`** *`address`*`|`**`icmp`** *`address`*`|`**`ip`** *`address`*`|`**`link|mgcp`** *`address`*`|`**`rip`** *`address`*`|`**`sip`** *`address`*`|`**`stp|tcp {`***`address`***`|`***`address:port`***`|`***`port`***`}|udp {`***`address`***`|`***`address:port`***`|`***`port`***`}]`**

Field	Definition
ethernet	Display Ethernet traffic. **1 or 2** - Define Ethernet port **both** - Both Ethernet ports
Filters all traffic of the following type.	
all	Allows all traffic.
arp	Displays all Address Resolution Protocol traffic. ***address*** = IP address of the interface.
bootp	Displays BootP related traffic. ***address*** = IP address of the interface.
control	Displays control related traffic.
data	Displays data related traffic.
dns	Displays Domain Naming Service related traffic. ***address*** = IP address of the interface.
icmp	Displays Internet Control Message Protocol related traffic. ***address*** = IP address of the interface.
ip	Displays Internet Protocol related traffic **Note:** Requires an IP address. ***address*** = IP address of the interface.
link	Displays link related traffic.
mgcp	Displays Media Gateway Control Protocol related traffic. ***address*** = IP address of the interface.
rip	Displays Routing Information Protocol related traffic. ***address*** = IP address of the interface.
sip	Displays Session Initiation Protocol related traffic. ***address*** = IP address of the interface.
stp	Displays Spanning Tree Protocol related traffic.
tcp	Displays Transmission Control Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address ***port*** = Port of the interface
udp	Displays User Datagram Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address:port of the interface. ***port*** = Port of the interface

Example: **`adit 3500# debug portmon ethernet 1 all`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon management

Use the **debug portmon management** command allows the user to configure management trace suppression. See *no debug portmon* command on page 3-16.

Syntax: `# debug portmon management {hush|off}`

Field	Definition
hush	**hush** - Enable suppression of management traffic trace
off	**off** - Disable suppression of management traffic trace

Example: `adit 3500# debug portmon management hush`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon multilink

Use the **debug portmon multilink** command allows the user to monitor the multilink traffic. All traffic can be displayed, or a specific traffic type can be defined.
Note: Immediately after this command is issued, any traffic that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug portmon** command. See *no debug portmon* command on page 3-16

Syntax: **# debug portmon multilink** *port* **{all|arp** *address*|**bootp** *address*|**control**|**data**|**dns** *address*|**icmp** *address*|**ip** *address* |**link**|**mgcp** *address*|**rip** *address*|**sip** *address*|**stp**|**tcp {***address*| *address*:*port*|*port***}**|**udp {***address*|*address*:*port*|*port***}}**

Field	Definition
port	Enter multilink port. Range 1.
all	Allows all traffic.
arp	Displays all Address Resolution Protocol traffic. ***address*** = IP address of the interface.
bootp	Displays BootP related traffic. ***address*** = IP address of the interface.
control	Displays control related traffic.
data	Displays data related traffic.
dns	Displays Domain Naming Service related traffic. ***address*** = IP address of the interface.
icmp	Displays Internet Control Message Protocol related traffic. ***address*** = IP address of the interface.
ip	Displays Internet Protocol related traffic **Note:** Requires an IP address. ***address*** = IP address of the interface.
link	Displays link related traffic.
mgcp	Displays Media Gateway Control Protocol related traffic. ***address*** = IP address of the interface.
rip	Displays Routing Information Protocol related traffic. ***address*** = IP address of the interface.
sip	Displays Session Initiation Protocol related traffic. ***address*** = IP address of the interface.
stp	Displays Spanning Tree Protocol related traffic.
tcp	Displays Transmission Control Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address ***port*** = Port of the interface
udp	Displays User Datagram Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address:port of the interface. ***port*** = Port of the interface

Example: **adit 3500# debug portmon multilink 1 mgcp 192.168.1.140**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon raw

Use the **debug portmon raw** command allows the user to display raw data related traffic. See *no debug portmon* command on page 3-16.

Syntax: `# debug portmon raw {off|on}`

Field	Definition
off	Disable display of packet hex data
on	Enables display of packet hex data

Example: `adit 3500# debug portmon raw off`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug portmon serial

Use the **debug portmon serial** command allows the user to monitor traffic on a serial interface.

Note: Immediately after this command is issued, any traffic that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug portmon** command. See *no debug portmon* command on page 3-16.

Syntax: `# debug portmon serial port {all|arp address|bootp address|control|data|dns address|icmp address|ip address |link|mgcp address|rip address|sip address|stp|tcp {address| address:port|port}|udp {address|address:port|port}}`

Field	Definition
port	Displays specific port traffic. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.
all	Allows all traffic.
arp	Displays all Address Resolution Protocol traffic. ***address*** = IP address of the interface.
bootp	Displays BootP related traffic. ***address*** = IP address of the interface.
control	Displays control related traffic.
data	Displays data related traffic.
dns	Displays Domain Naming Service related traffic. ***address*** = IP address of the interface.
icmp	Displays Internet Control Message Protocol related traffic. ***address*** = IP address of the interface.
ip	Displays Internet Protocol related traffic **Note:** Requires an IP address. ***address*** = IP address of the interface.
link	Displays link related traffic.
mgcp	Displays Media Gateway Control Protocol related traffic. ***address*** = IP address of the interface.
rip	Displays Routing Information Protocol related traffic. ***address*** = IP address of the interface.
sip	Displays Session Initiation Protocol related traffic. ***address*** = IP address of the interface.
stp	Displays Spanning Tree Protocol related traffic.
tcp	Displays Transmission Control Protocol related traffic. ***address*** = IP address of the interface. ***address:port*** = IP address ***port*** = Port of the interface

Example: `adit 3500# debug portmon 1 rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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debug trace

Use the **debug trace** command allows the user to configure trace settings.
Note: Immediately after this command is issued, any trace that falls into the filter parameter will be displayed. To turn the monitoring off, you must issue a **no debug trace** command. See *no debug trace* command on page 3-16.

Syntax: `# debug trace {cas|pri|sip} {enable|tx|rx}`

Field	Definition
cas	Enable Channel Associated Signaling (CAS) tracing. **Note:** Not supported on the Adit 3104.
pri	Enable Primary Rate Interface (PRI) tracing. **Note:** Not supported on the Adit 3104.
sip	Enable Session Initiation Protocol (SIP) tracing.
enable	Enable the trace.
tx	Enable trace in the transmit direction.
rx	Enable trace in the receive direction.

Example:
```
adit 3500# debug trace cas enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. **Note:** This command can be entered in any Configuration mode with the same result.

Syntax: `# end`

Example:
```
adit 3500# end
Username:
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `# exit`

Example:
```
adit 3500# exit
adit 3500>
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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help

Use the **help** command to display the help information for this command. **Note:** This can also be accomplished with a **?**. This command can be entered in any configuration mode.

Syntax: **# help**

or

Syntax: **# ?**

Example: **adit 3500# help**

```
?                       Display all commands
clear                   Clear command
configure               Switch to Configure mode
copy                    Configures device database
date                    Display time/date
debug                   Debug the system
end                     Exit to User mode
exit                    Exit to User mode
help                    Display all commands
history                 Display past entered commands
log                     Configure logging settings
no                      Disable a feature
ping                    Ping a remote host
reload                  Reboot the system
show                    Show various system information
traceroute              Traceroute to a remote host
upgrade                 Upgrade firmware from a local computer
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: **`# history`**

Example: **`adit 3500# history`**

```
debug trace sip rx
no debug trace
no debug trace rx
no debug trace sip
no debug trace
no debug trace sip
debug trace
date
end
enable
configure terminal
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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log clear

Use the **log clear** command to clear the history of the log.

Syntax: `# log clear {all|firewall|pri|sip|system|t1|lcc}`

Field	Definition
all	Clear the entire event log.
firewall	Clear firewall event log.
pri	Clear PRI event log. **Note:** Not supported on the Adit 3104.
sip	Clear SIP event log.
system	Clear system event log.
t1	Clear T1 event log. (Adit 3104, Adit 3200, Adit 3500 only.)
lcc	Clear Link Cross-Connect (LCC) event log. (MSR only.)

Example: `adit 3500# log clear firewall`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no debug

no debug portmon

Use the **no debug portmon** command to stop the Packet Monitor (portmon) process. To configure a debug command, see the *debug* command on page 3-5.

Syntax: `# no debug portmon`

Example: `adit 3500# no debug portmon`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no debug trace

Use the **no debug trace** command to stop the trace process. To configure a debug trace, see the *debug trace* command on page 3-12.

Syntax: `# no debug trace {cas|pri|sip}`

Field	Definition
cas	Remove trace CAS functions. **Note:** Not supported on the Adit 3104.
pri	Remove trace PRI functions. **Note:** Not supported on the Adit 3104.
sip	Remove trace SIP functions.

Example: `adit 3500# no debug trace sip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ping

Use the **ping** command to send a sequence of ICMP echo request packets to the specified host. If the host variable is omitted, and you are in Privileged mode, the router prompts you for additional information. **Note:** The ping command verifies a connection and is a very important troubleshooting tool.

Syntax: **# ping {***address* **[-i** *time***] [-l** *size***] [-n** *count***] [-w** *timeout***] | stop}**

Field	Definition
address	IP address of the host to ping.
-i *time*	Specifies the intervals between pings. Range is 0 - 600000 milliseconds.
-l *size*	Specifies the size of the ping requests packets to be sent. Range 64 - 1518.
-n *count*	Specifies the number of ping requests to be sent. Range 1-1000. Default is 4.
-w *timeout*	Specifies the time to wait for a response before sending the next ping request packet. Timeout is given in seconds. Range 1-600000. Default is 2 seconds.
stop	Stop the ping process.

Example:
```
Adit 3500# ping 192.168.1.1
packet #1 has arrived
packet #2 has arrived
packet #3 has arrived
packet #4 has arrived
4 packets transmitted, 4 packets received
round-trip min/avg/max = 1/3/9 ms
```

Example:
```
Adit 3500# ping 192.168.1.1 -n 2 -l 500
packet #1 has arrived
packet #2 has arrived
2 packets transmitted, 2 packets received
round-trip min/avg/max = 2/2/2 ms
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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reload

Use the **reload** command to reset the system.

CAUTION! **THIS IS A SERVICE AFFECTING COMMAND.**

Syntax: `# reload`

Example:
```
adit 3500# reload
Going to reboot!
Restarting system.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show

For maneuverability through these commands, all command names in blue or italics are hyperlinked.

show alarms
show arp
show caclkcd
show config access-control
show config access-list
show config controller t1
show config dmz-host
show config host-filter
show config interface ethernet
show config interface multilink
show config interface serial
show config ip dhcp ethernet
show config local-server
show config nat-bypass
show config network-object
show config port-trigger
show config remote-admin
show config security-default
show config security-log
show config service
show config static-dns
show config time-range
show config voice-port fxs
show config voice-port trunk
show controller lcc
show controller t1
show dhcp-leases
show digit-map
show interface description
show interface ethernet
show interface multilink
show interface serial
show ip ospf
show ip ospf database
show ip ospf interface
show ip ospf neighbor
show ipsec
show l2tpc
show licenses
show log
show mac-address-table
show nat-fw
show port-trigger
show pptpc
show pptps
show route
show running-config
show service
show users
show version
show voice-port fxs
show voice-port trunk

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show alarms

Use the **show alarms** command to display the active alarms.

Syntax: **# show alarms [t1** *port*|**lcc** *number*]
{alert|all|critical|info|major|minor}

Field	Definition
t1 *port*	Display alarms for a specific port. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4.
lcc *number*	Display alarms for a specific Link Cross-Connect (LCC). **MSR:** Range = 1-8.
alert	Filter alert alarms (threshold crossing).
all	Display all alarms.
critical	Filter critical alarms.
info	Filter information alarms.
major	Filter major alarms.
minor	Filter minor alarms.

Example: **adit 3500# show alarms major**

```
Alarm                              Severity       Time
Alarm LOS T1 4                     Major          Jan  1 00:00:08 2006
Alarm LOS T1 3                     Major          Jan  1 00:00:08 2006
Alarm PRI T1 2 - Line NOT Ready    Major          Jan  1 00:00:07 2006
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show arp

Use the **show arp** command to display the ARP (Address Resolution Protocol) table.

Syntax: **# show arp {all**|*address*|**ethernet** *port***}**

Field	Definition
all	Display entire ARP table.
address	Display ARP items of the entered IP address.
ethernet *port*	Display Ethernet ARP items only. *port* - Define an Ethernet port number. Range 1 - 2.

Example: **adit 3500# show arp ethernet 1**

```
1   192.168.1.1       ether    Dynam  00:50:da:59:f0:25  eth_lan
```

Example: **adit 3500# show arp 192.168.1.1**

```
ip=192.168.1.1   flags=Dynam mac=00:50:da:59:f0:25 iface=eth_lan
```

Example: **adit 3500# show arp all**

```
#   IP-address        HW-type  Flags  HW-address         Iface
1   192.168.1.1       ether    Dynam  00:50:da:59:f0:25  eth-1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show caclkcd

Use the **show caclkcd** command to display the linux kernel crash dump

Syntax: **# show caclkcd**

Example: **adit 3500# show caclkcd**

```
 ----------------  Begin cacLKCD  -----------
Jan  1 2003 00:00:44 <3> openrg: unhandled page fault at pc=0x400528c0, lr=0x400
digit-map              Show digit-map settings
52890 (bad address=0x30303038, code 245)Show various interfaces
pc : [<400528c0>]    lr : [<40052890>]    No        Show l
r7 : 4006bb9c  r6 : 30303038  r5 : 4006bb9c  r4 : 4006bc1c
port-trigger
r3 : 30303030  r2 : 4006bc1c  r1 : 4006bba5  r0 : 00000000
route                  Show routing table
Flags: nzCv  IRQs on  FIQs on  Mode USER_32  Segment user   Map the configurations to
CLI commands
User-mode stack:(0xbffffbac to 0xc0000000)
service                Display services
fba0:         00000001 0036d238 003704d0 0036d238 003704d0their privilages
versio
fbc0: 003704d4 0002e1e0 00000001 003704d0 0002e1a8 00000004 00000005 000281d4
voice-port             Show voice-port
fbe0: 4006d24d 4006d24c 4006d24c ffffffff 00000000 00rt            Show
fce0:00024324 00469c08 00000001 00025144 00469c08 00469c08 0009575c 40050458ipaddress
Alarm LOS T1#2
fd00: 002c85a0 000001e3 40e88bc0 00000000 00000000 00000000 0009574c 0036c448
exit
fd60: 0036e270 00000000 00000000 00000004 00000094 bffffdbc 00000004 40033490
fd80: 00000000 00000000 00000000 00000094 0011121c 0000008c bffffdbc 00263674
fda0: 00000bfd 0000008c 0011138c ffffffff ffffffff 00000007 00111c44 feedbabe
fdc0: 00001063 00033bb6 0000004e 00000000 00000023 002c81e8 4006b010 400335dc
fde0: 00000000 00000000 00000000 002c8188 401a430c 002c8188 00000023 002c81e8
fe00: 001df753 00000000 401a4494 4003f960 001df753 001df730 002c8188 001df753
fe20: 001df730 4006b010 401a5ae4 00000023 001df730 00000000 00000000 00000000
fe40: 00000000 00000000 0000009c 00000000 065ca5ac 00000002 0000009c 00000000
fe60: 057aacc3 00000000 00000000 40047924 00000020 401bb254 40032cf0 4002ead4
fe80: 00000020 400054d0 0000009c 00000000 05a4faa0 00000002 400051a8 0000c222
fea0: 00000000 40000ca4 00000000 00000000 00000000 400051a8 0000938c 00000000
fec0: 00000039 00282fac 0000bc4c 4000c848 00000000 40000ca4 bfffff34 bfffff3c
fee0: 00000001 00000704 bfffff3c 00000001 bfffff30 00000000 00000000 4006b010
ff00: 00000000 40051048 bfffff34 401bb458 0001f828 401967e4 00000000 00000000
ff20: 0001145c 00000000 40196814 00000000 00011474 bfffffd2 00000000 bfffffde
ff40: bfffffe5 00000000 00000010 00000097 00000006 00001000 00000011 00000064
ff60: 00000003 00008034 00000004 00000020 00000005 00000006 00000007 40000000
ff80: 00000008 00000000 00000009 0001145c 0000000b 00000000 0000000c 00000000
ffa0: 0000000d 00000000 0000000e 00000000 0000000f bffffffce 00000000 00000000
ffc0: 00000000 00000000 00000000 00007635 62002f62 696e2f6f 70656e72 6700484f
ffe0: 4d453d2f 00544552 4d3d6c69 6e757800 2f62696e 2f6f7065 6e726700 00000000
 ----------------  End cacLKCD    -----------
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config access-control

Use the **show config access-control** command to display all access control filters.

Syntax: **# show config access-control**

Example: **adit 3500# show config access-control**

```
access-control id 1 apply-to lan time-range always service 1 enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config access-list

Use the **show config access-list** command to display all access lists.

Syntax: **# show config access-list**

Example: **adit 3500# show config access-list**

```
access-list rule 0 apply eth-lan direction in operation accept time-range 0
src-host 0.0.0.0-255.255.255.255 dst-host 0.0.0.0-255.255.255.255 service
50331673 frag none log none (enable)
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config controller t1

Use the **show config controller t1** command to display the T1 information.

Syntax: **# show config controller t1** *port*

Field	Definition
port	T1 port to display. **Adit 3104:** Value must be 1. **Adit 3500:** Range 1 - 4.

Example: **adit 3500# show config controller t1 1**

```
controller t1 1
     description T1 1
     lbo short 133
     fdl none
     framing esf
     linecode b8zs
     loopdetect none
     loopback none
     idle-pattern 0x7f
     no pri-group
     no tdm-group
     ds0-group timeslots 1-24
     threshold daily ses 0
     threshold daily sefs 0
     threshold daily uas 0
     threshold daily css 0
     threshold daily les 0
     threshold daily bes 0
     threshold daily dm 0
     threshold daily lcv 0
     threshold daily pcv 0
     threshold daily es 0
     threshold min15 ses 0
     threshold min15 sefs 0
     threshold min15 uas 0
     threshold min15 css 0
     threshold min15 les 0
     threshold min15 bes 0
     threshold min15 dm 0
     threshold min15 lcv 0
     threshold min15 pcv 0
     threshold min15 es 0
     no shutdown
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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show config dmz-host

Use the **show config dmz-host** command to display the DMZ information.

Syntax: **# show config dmz-host**

Example: **adit 3500# show config dmz-host**

```
dmz-host 192.168.1.200 enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config host-filter

Use the **show config host-filter** command to display the IP and host name filters.

Syntax: **# show config host-filter**

Example: **adit 3500# show config host-filter**

```
host-filter id test ip-address 192.168.1.110 apply-to lan
time-range always
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config interface ethernet

Use the **show config interface ethernet** command to display the Ethernet port information.

Syntax: **# show config interface ethernet** *port*

Field	Definition
port	Ethernet port to display. Range 1 - 2

Example: **adit 3500# show config interface ethernet 1**

```
Interface Ethernet 1
     ip address 192.168.1.1 mask 255.255.255.0
     description Ethernet 1
     no tos ip
     tos ip value 0x0
     no ip dhcp auto-provision
     no ip primary-dns
     no ip secondary-dns
     ip route-mode route
     no ip default-route
     no ip proxy-arp
     no ip rip
     ip rip receive-version 1or2
     ip rip send-version 2-bcast
     no firewall
     metric 50
     no shutdown
     speed auto
     full-duplex
     remote-admin enable
     no schedule-availability
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config interface multilink

Use the **show config interface multilink** command to display the Multilink port information.

Syntax: **# show config interface multilink** *port*

Field	Definition
port	Multilink port to display. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range = 1-8.

Example: **adit 3500# show config interface multilink 1**

```
Interface Multilink 1
     ip address unnumbered
     description Multilink 1
     ip mtu auto
     no ip primary-dns
     no ip secondary-dns
     ip route-mode napt
     ip default-route enable
     no ip rip
     ip rip receive-version none
     ip rip send-version none
     no sip-alg
     firewall enable
     metric 0
     no shutdown
     no ppp authentication
     no ppp encryption
     no ppp username
     ppp restart-timer 3
     ppp time-btwn-reconnect  30
     no ppp on-demand
     ppp link-fragmentation 1600
     no ppp qos-interleaving
     no schedule-availability
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config interface serial

Use the **show config interface serial** command to display serial interface information.

Syntax: **# show config interface serial** *port*

Field	Definition
port	Serial interface to display. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.

Example: **adit 3500# show config interface serial 1**

```
interface serial 1
     encapsulation ppp
     no ppp authentication
     no ppp encryption
     no ppp username
     ppp restart-timer 3
     ppp time-btwn-reconnect  30
     no ppp on-demand
     ip address unnumbered
     description Serial 1
     ip mtu auto
     no ip primary-dns
     no ip secondary-dns
     ip route-mode napt
     ip default-route enable
     no ip rip
     ip rip receive-version none
     ip rip send-version none
     no sip-alg
     firewall enable
     metric 0
     no shutdown
     no schedule-availability
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config ip dhcp ethernet

Use the **show config ip dhcp ethernet** command to display the DHCP Pool.

Syntax: **# show config ip dhcp ethernet** *port*

Field	Definition
port	Ethernet port to display. Range 1 - 2

Example: **adit 3500# show config ip dhcp ethernet 1**

```
ip dhcp pool ethernet 1
     no relay
     start-address 192.168.1.1
     end-address 192.168.1.244
     subnet-mask 255.255.255.0
     lease 60
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config local-server

Use the **show config local-server** command to display the local server configuration.

Syntax: **# show config local-server**

Example: **adit 3500# show config local-server**

```
local-server id 0 hostname LocalHost1 time-range 0 fwd-port 160
service 16777216  enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config nat-bypass

Use the **show config nat-bypass** command to display the NAT Bypass entries.

Syntax: **# show config nat-bypass**

Example: **adit 3500# show config nat-bypass**

```
nat-bypass ip-address 192.168.1.120 mask 255.255.255.0
nat-bypass ip-address 192.168.1.120 mask 255.255.255.0 enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config network-object

Use the **show config network-object** command to display the network object configuration.

Syntax: **# show config network-object**

Example: **adit 3500# show config network-object**

```
network-object id 0 description NetworkObject1 ip-address
192.168.1.200
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config port-trigger

Use the **show config port-trigger** command to display the port trigger information.

Syntax: **# show config port-trigger**

Example: **adit 3500# show config port-trigger**

```
port-trigger service 134217730 enable
port-trigger service 16777223 enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config remote-admin

Use the **show config remote-admin** command to display the remote admin configuration.

Syntax: **# show config remote-admin**

Example: **adit 3500# show config remote-admin**

```
remote-admin telnet primary-port port 23
remote-admin telnet secondary-port port 8023
remote-admin telnet primary-secure-port port 992
remote-admin web primary-port port 80
remote-admin web secondary-port port 8080
remote-admin web primary-secure-port port 443
remote-admin web secondary-secure-port port 8443
no remote-admin snmp
no remote-admin icmp
no remote-admin udp
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config security-default

Use the **show config security-default** command to display the security settings.

Syntax: **# show config security-default**

Example: **adit 3500# show config security-default**

```
security-default typical
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config security-log

Use the **show config security-log** command to display the security log.

Syntax: **# show config security-log**

Example: **adit 3500# show config security-log**

```
security-log accept-in-connects enable
security-log rem-admin-attempts enable
security-log prevent-log-overrun enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config service

Use the **show config service** command display the current defined services.

Syntax: **# show config service**

Example: **adit 3500# show config service**

```
service id 4 name service1 description test
protocol tcp server-src-port 1-1 server-dst-port 4-4
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config static-dns

Use the **show config static-dns** command to display the static DNS entries.

Syntax: **# show config static-dns**

Example: **adit 3500# show config static-dns**

```
static-dns hostname test1 ip-address 10.10.2.2
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show config time-range

Use the **show config time-range** command to display the time range configuration.

Syntax: **# show config time-range**

Example: **adit 3500# show config time-range**

```
time-range id 0 name Schedule1 inactive time-segment 0 sun time-range
 00:00-00:30
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show config voice-port fxs

Use the **show config voice-port fxs** command to display the FXS port information.

Syntax: **# show config voice-port fxs [*port*]**

Field	Definition
port	FXS port to display. **Adit 3104:** Range = 1 - 24. **Adit 3500:** Range = 1 - 4. **MSR:** Range = 1 - 48.

Example: **adit 3500# show config voice-port fxs 1**

```
voice-port fxs
     no digit-map
     dial-timeout 5

voice-port fxs 1
     description  Line 1
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     signal loop-start
     no per-line-logging
     no shutdown
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show config voice-port trunk

Use the **show config voice-port trunk** command display the Trunk port information.

Syntax: **# show config voice-port trunk** *port*

Field	Definition
port	Trunk port to display. Value must be 1.

Example: **adit 3500# show config voice-port trunk 1**

```
Voice-port Trunk 1
     description  Trunk 1
     trunk 000000005
     no comfort-noise
     connection t1 2
     no echo-cancel
     input-gain 0
     output-gain 0
     isdn switch-type pri-ni2
     no digit-map
     no registration enable
```

Example: **adit MSR# show config voice-port trunk 1**

```
Voice-port Trunk 1
     description  Trunk 1
     trunk 000000005
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     isdn switch-type pri-ni2
     no digit-map
     no registration enable
```

Supported Platforms: **Adit 3500, MSR**

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show controller lcc

Use the **show controller lcc** command to display the settings for a Link Cross Connect on the MSR card.

Syntax: **# show controller lcc** *number*

Field	Definition
number	Link Cross Connect number, 1-8.

Example: **Adit MSR> show controller lcc 1**

```
Settings for interface LCC 1
----------------------------
Name              : LinkCC 1
Device Name       : LinkCC 1
Status            : Operational
Network           : WAN
Connection Type : Link Cross Connect
Connection      : Data
Alarm Reporting : Enabled
```

Supported Platforms: **MSR**

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show controller t1

Use the **show controller t1** command displays the T1 configuration and performance information.

Syntax: **# show controller t1** *port*

Field	Definition
port	DS1 (T1) interface. Adit 3104 Range = 1 Adit 3500 Range 1 - 4

Example: **adit 3500# show controller t1 1**

```
Settings for interface T1 1
---------------------------
Interface name    : T1 1
Transmit status   : Up
Receive status    : Up
Framing           : ESF
Clock source      : Clock Reference 1
Line Code         : B8ZS
Loop Detection    : OFF
FDL Type          : NONE
Line Length       : DSX-1 equalization for 0-133ft
Status            : Connected

Performance Threshold Settings            15 min          1 day
                                          ------          -----
unavailable seconds (uas):                0               0
severely errored seconds (ses):           0               0
errored seconds (es):                     0               0
severely errored frame seconds (sefs):    0               0
line errored seconds (les):               0               0
controlled slip seconds (css):            0               0
bursty errored seconds (bes):             0               0
degraded minutes (dm):                    0               0
line code violations (lcv):               0               0
path code violations (pcv):               0               0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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show dhcp-leases

Use the **show dhcp-leases** command to display the DHCP lease table.

Syntax: **# show dhcp-leases**

Example: **Adit 3500# show dhcp-leases**

```
Ethernet 1
Hostname : new-host IP:192.168.1.10 MAC:00:00:ff:ff:00:00
Type:static Expires-In:0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show digit-map

Use the **show digit-map** command to display the Digit Map patterns.

Syntax: **# show digit-map**

Example: **adit 3500# show digit-map**

```
Index   Pattern
-----------------------------------------------------------------
1       [2-9]11
2       [0-1][2-9]11
3       0[#T]
4       00
5       *xx
6       011x.[#T]
7       [0-1]xxxxxxx[#T]
8       [0-1][2-9]xxxxxxxxx
9       [2-9]xxxxxxxxx
10      [2-9]xxxxxx[#T]
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show interface description

Use the **show interface description** command to display the interface information.

Syntax: **# show interface description**

Example: **adit 3500# show interface description**

```
Device        State      IP/Mask                              Dependencies
 T1 1          running                                         None
 T1 2          running                                         None
 T1 3          up                                              None
 T1 4          up                                              None
 Serial 1      up         0.0.0.0/255.255.255.255              T1 1
 Ethernet 2    disabled   0.0.0.0/0.0.0.0                      None
 Ethernet 1    running    192.168.1.1/255.255.255.0            None
 IPsec 0       disabled   0.0.0.0/0.0.0.0                      Serial 1
 IPsec 1       running    192.168.1.1/255.255.255.0            Ethernet 1
```

Example: **Adit MSR# show interface description**

```
Device         State       IP/Mask                             Dependencies
 LinkCC 1      running                                         None
 LinkCC 2      down                                            None
 LinkCC 3      down                                            None
 LinkCC 4      down                                            None
 LinkCC 5      down                                            None
 LinkCC 6      down                                            None
 LinkCC 7      down                                            None
 LinkCC 8      down                                            None
 Serial 1      up          0.0.0.0/255.255.255.255             LinkCC 1
 Ethernet 2    up          194.168.1.1/255.255.0.0             None
 Ethernet 1    running     192.168.1.1/255.255.255.0           None
 IPsec 0       disabled    0.0.0.0/0.0.0.0                     Serial 1
 IPsec 1       running     192.168.1.1/255.255.255.0           Ethernet 1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show interface ethernet

Use the **show interface ethernet** command to display the Ethernet interface information.

Syntax: **# show interface ethernet** *port*

Field	Definition
port	Port number range 1-2.

Example: **adit 3500# show interface ethernet 1**

```
Device=Ethernet 1   State=running   IP/Mask=192.168.1.1/255.255.255.0
         Dependency=None
  Status: Connected;  Link: 10T-HD
  Tx (Packets/Bytes/Dropped/Errors)=(1910/1451643/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(2239/136636/0/0)
  Broadcasts (Tx/Rx)=(0/0)  Multicasts=0  Collisions=0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show interface multilink

Use the **show interface multilink** command to display the configuration of the Multilink.

Syntax: **# show interface multilink** *port*

Field	Definition
port	Multilink port number. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range is 1-8.

Example: **adit 3500# show interface multilink 1**

```
 Device=mlink-1      State=down      IP/Mask=Unnumbered
         Dependency=t1-1,t1-4
  Status: Disconnected
```

Example: **adit MSR# show interface multilink 1**

```
Device=mlink-1      State=down      IP/Mask=Unnumbered
         Dependency=LCC1,LCC3
  Status: Disconnected
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show interface serial

Use the **show interface serial** command to display the configuration of the serial interface.

Syntax: **# show interface serial** *port*

Field	Definition
port	Serial interface. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.

Example: **adit 3500# show interface serial 1**

```
Device=Serial 1     State=up        IP/Mask=0.0.0.0/255.255.255.255
         Dependency=T1 1
  Status: Reconnecting...
  Tx (Packets/Bytes/Dropped/Errors)=(556/6672/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
```

Example: **adit MSR# show interface serial 3**

```
Device=Serial 1     State=up        IP/Mask=0.0.0.0/255.255.255.255
         Dependency=LCC1
  Status: Reconnecting...
  Tx (Packets/Bytes/Dropped/Errors)=(3332/39984/0/0)
  Rx (Packets/Bytes/Dropped/Errors)=(0/0/0/0)
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show ip ospf

Use the **show ip ospf** command to display the general OSPF routing process information.

Syntax: **# show ip ospf**

Example: **adit 3500# show ip ospf**

```
Routing Process "ospf 0" with ID 192.168.1.1
Process uptime is 28 minutes
Process bound to VRF default
Conforms to RFC2328, and RFC1583Compatibility flag is disabled
Supports only single TOS(TOS0) routes
Supports opaque LSA
Supports Graceful Restart
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Refreshtimer 10 secs
Number of incomming current DD exchange neighbors 0/5
Number of outgoing current DD exchange neighbors 0/5
Number of external LSA 0. Checksum 0x000000
Number of opaque AS LSA 0. Checksum 0x000000
Number of router LSA 0
Router LSA database is unlimited.
Number of network LSA 0
Network LSA database is unlimited.
Number of non-default summary LSA 0
Summary LSA database is unlimited.
Number of asbr summary LSA 0
ASBR Summary LSA database is unlimited.
Number of non-default external LSA 0
External LSA database is unlimited.
Number of LSA originated 0
Number of LSA received 0
Number of areas attached to this router: 0
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf database

Use the **show ip ospf database** command to display information related to the OSPF database for a specific router. The various forms of this command deliver information on defined OSPF link state advertisements.

Syntax: **# show ip ospf database {setting}**

Syntax: **# show ip ospf database {adv-router** *address*|**self-originate}**

Syntax: **# show ip ospf database network** *link-state-id*

Syntax: **# show ip ospf database router {***link-state-id*|**adv-router** *address*|**self-originate}**

Syntax: **# show ip ospf database summary [***link-state-id***] [adv-router** *address*|**self-originate]**

Field	Definition
adv-router *address*	Displays all the LSAs of the specified router. If no IP address is entered, the local router information will be displayed (same as **self-originate**).
link-state-id	Portion of the Internet environment that is being described by the advertisement. The value entered depends on the advertisement's LS type. It must be entered in the form of an IP address. When the link state advertisement is describing a network, the link-state-id can take one of two forms: 1. The network's IP address (as in type 3 summary link advertisements and in autonomous system external link advertisements). 2. A derived address obtained from the link state ID. (Note that masking a network links advertisement's link state ID with the network's subnet mask yields the network's IP address.) When the link state advertisement is describing a router, the link state ID is always the described router's OSPF router ID. When an autonomous system external advertisement (LS Type = 5) is describing a default route, its link state ID is set to Default Destination (0.0.0.0).
network	Displays information only about the network LSAs.
router	Displays information only about the Router LSAs.
self-originate	Displays only self-originated LSAs (from the local router).
summary	Displays information on.ly about the summary LSAs.

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Example: **adit 3500# show ip ospf database**

```
                Router Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum  Link count
192.168.3.1     192.168.3.1      313 0x800000c1 0x4978 1
192.168.3.255   192.168.3.255    568 0x8000003a 0xa6c0 1

                Net Link States (Area 0.0.0.1)

Link ID         ADV Router      Age  Seq#       CkSum
192.168.3.251   192.168.3.255    388 0x80000003 0xbcec
```

Example: **adit 3500# show ip ospf database self-originate**

```
Router Link States (Area 0.0.0.1)
Link ID ADV Router Age Seq# CkSum Link count
192.168.3.255 192.168.3.255 420 0x8000003a 0xa6c0 1
Net Link States (Area 0.0.0.1)
Link ID ADV Router Age Seq# CkSum
192.168.3.251 192.168.3.255 240 0x80000003 0xbcec
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf interface

Use the **show ip ospf interface** command to display OSPF related interface information.

Syntax: **# show ip ospf interface {ethernet** *port*|**serial** *port*|**multilink** *port*}

Field	Definition
ethernet *port*	Display information on the Ethernet interface. **port** = 1 or 2
serial *port*	Display information on the serial interface. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.
multilink *port*	Display information on the Multilink interface. **Adit 3104, Adit 3500, MSR:** Value must be 1

Example: **adit 3500# show ip ospf interface ethernet 1**

```
Ethernet 1 is up, line protocol is up
Internet Address 192.168.254.202, Mask 255.255.255.0, Area 0.0.0.0
AS 201, Router ID 192.168.99.1, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State OTHER, Priority 1
Designated Router id 192.168.254.10, Interface address 192.168.254.10
Backup Designated router id 192.168.254.28, Interface addr 192.168.254.28
Timer intervals configured, Hello 10, Dead 60, Wait 40, Retransmit 5
Hello due in 0:00:05
Neighbor Count is 8, Adjacent neighbor count is 2
  Adjacent with neighbor 192.168.254.28  (Backup Designated Router)
  Adjacent with neighbor 192.168.254.10  (Designated Router)
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ip ospf neighbor

Use the **show ip ospf neighbor** command to display OSPF neighbor information.

Syntax: **# show ip ospf neighbor [interface** *address*|*neighbor-id*|**detail]**

Field	Definition
interface *address*	Optional parameter. Enter interface IP address to define display.
neighbor-id	Optional parameter. Enter neighbor IP address to define display.
detail	Optional parameter. Enable display of detailed information.

Example: **adit 3500# show ip ospf neighbor**

```
   ID           Pri    State         Dead Time     Address          Interface
10.199.199.137  1     FULL/DR        0:00:31     192.168.80.37      Ethernet1
172.16.48.1     1     FULL/DROTHER   0:00:33     172.16.48.1        Fddi0
172.16.48.200   1     FULL/DROTHER   0:00:33     172.16.48.200      Fddi0
10.199.199.137  5     FULL/DR        0:00:33     172.16.48.189      Fddi0
```

Example: **adit 3500# show ip ospf neighbor 10.199.199.137**

```
  Neighbor 10.199.199.137, interface address 192.168.80.37
   In the area 0.0.0.0 via interface Ethernet0
   Neighbor priority is 1, State is FULL
   Options 2
   Dead timer due in 0:00:32
   Link State retransmission due in 0:00:04
Neighbor 10.199.199.137, interface address 172.16.48.189
   In the area 0.0.0.0 via interface Fddi0
   Neighbor priority is 5, State is FULL
   Options 2
   Dead timer due in 0:00:32
   Link State retransmission due in 0:00:03
```

Example: **adit 3500# show ip ospf neighbor detail**

```
 Neighbor 192.168.5.2, interface address 10.225.200.28
   In the area 0 via interface GigabitEthernet1/0/0
   Neighbor priority is 1, State is FULL, 6 state changes
   DR is 10.225.200.28 BDR is 10.225.200.30
   Options is 0x42
   LLS Options is 0x1 (LR), last OOB-Resync 00:03:08 ago
   Dead timer due in 00:00:36
   Neighbor is up for 00:09:46
  Index 1/1, retransmission queue length 0, number of retransmission 1
   First 0x0(0)/0x0(0) Next 0x0(0)/0x0(0)
   Last retransmission scan length is 1, maximum is 1
   Last retransmission scan time is 0 msec, maximum is 0 msec
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show ipsec

Use the **show ipsec** command to display the IPSec Connections or the connection configuration information.

Syntax: **# show ipsec [vpn_ipsec***connection-id***]**

Field	Definition
connection-id	Enter the name of a connection.

Example:
```
adit 3500# show ipsec
 vpn_ipsec 0
 vpn_ipsec 1
 vpn_ipsec 2
 vpn_ipsec 3
```

Example: **adit 3500# show ipsec vpn_ipsec2**

```
Device = test State = Enabled  tatus = No VPN software license
Schedule Availability = Always
Remote Tunnel Endpoint Address = 192.168.1.200
Security Association Mode = Tunnel
Remote Subnet = None
Route NetBOIS Broadcasts = Enabled
Dead Period Detection = Disable
      Remote Broadcast Address = 192.168.1.200
Key Exchange Method = Automatic
Auto_Reconnect = Enabled
Mode = Main Mode
Negotiation Attempts = 3
Rekey Life Time = 3600 sec
Rekey Margin = 540
Rekey Fuzz Percent = 100
Peer Authentication = Shared Secret
      Shared Secret = mysecret
Encryption = 3des,
Hash = md5,sha1,
Group = grp2,grp5,

Lifetime = 28000 sec
Use PFS = Enabled
      Group = Same group as phase 1
AH Transform = md5,sha1,
ESP Encryption Transform = esp-3des,
ESP Authentication Transform = esp-md5,esp-sha1,
IP Compression = Disabled

Default Route = Disabled
RIP = Enabled
RIP Listen Msg. = RIPv1/2
RIP Send Msg. = None
OSPF = Disabled
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show l2tpc

Use the **show l2tpc** command to display the Layer 2 Tunneling Protocol Connections or the connection configuration information.

Syntax: **# show l2tpc [l2tpc** *connection-id*]

Field	Definition
connection-id	Enter the name of a connection.

Example: **adit 3500# show l2tpc**

```
l2tp#0
l2tp#1
l2tp#2
```

Example: **adit 3500# show l2tpc l2tpc 1**

```
Device = L2TPC#1
State = Disable
Status = Disabled
Schedule Availability = Always
MTU = 1456
Time Between  Reconnect Attempts = 0
Restart Timer = 0
PPP
On Demand = Disable
User Name =
Authentication =
Encryption = MPPE-40   MPPE-128   (Stateless)
IP Address =
Mask = 0.0.0.0
DNS Primary = 192.168.2.10   Secondary  =
Routing Mode = NAPT
SIP Alg = Enabled
Default Route = Enabled
Rip = Enabled
RIP Listen Msg = none
RIP Send Msg = none
Firewall = Enabled
Additional IP Address
IP Address                   Mask
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show licenses

Use the **show licenses** command to display all enabled feature keys.

Syntax: **# show licenses**

Example: **adit 3500# show licenses**

```
VPN   license = No
SIP   license = Yes
MGCP  license = No
G729A license = Yes
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show log

Use the **show log** command to display the current events on the system.

Syntax: **# show log {firewall|pri|sip|system|t1** *port*|**lcc** *number*} [*severity*]

Field	Definition
firewall	Filter firewall alarms
pri	Display PRI logs. **Note:** This is not supported on the Adit 3104.
sip	Display SIP logs.
system	Filter general system alarms
t1 *port*	Display event log for a specific T1 port. **Adit 3104:** Value must be 1. **Adit 3500:** Range = 1-4.
lcc *number*	Display event log for a specific Link Cross-Connect (LCC). **MSR:** Range = 1-8.
severity	**alert** - Filter alert alarms (threshold crossing) **all** - Display all alarms. **critical** - Filter critical alarms (service affecting) **info** - Filter informational alarms **major** - Filter major alarms (service affecting) **minor** - Filter minor alarms (non-service affecting)

Example: **adit 3500# show log t1 1 minor**

```
System Log      Message Jan  1 00:00:08 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:00:04 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 01:19:13 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:57:12 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:52 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:34 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:56:09 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
System Log      Message Jan  1 00:00:04 2003 kern.err T1 ALARM: Alarm LOS T1#1 Major received
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show mac-address-table

Use the **show mac-address-table** command to display the current MAC addresses (LAN\WAN).

Syntax: **# show mac-address-table**

Example: **adit 3500# show mac-address-table**

```
Ethernet 1 mac= 00:00:00:ff:ff:ff
Ethernet 2 mac= 00:00:00:ff:ff:fd
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show nat-fw

Use the **show nat-fw** command to display the current NAT and firewall connection table.

Syntax: **# show nat-fw**

Example: **adit 3500# show nat-fw**

```
Number  Content
1        TCP 11.0.0.4        36104<--> 172.15.16.1     36104[31.0.0.6 5516 ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1320 pkts 7 ppp100 Outgoing BY FTP
2        TCP 11.0.0.4        36103<--> 172.15.16.1     36103[31.0.0.6 21   ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1182 pkts 20 FTP child: Yes ppp100 Outgoing
3        TCP 11.0.0.4        36102<--> 172.15.16.1     36102[31.0.0.6 5515 ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1320 pkts 7 ppp100 Outgoing BY FTP
4        TCP 11.0.0.4        36101<--> 172.15.16.1     36101[31.0.0.6 21   ]
TIME_WAIT/TIME_WAIT ttl 0 sec bytes 1182 pkts 20 FTP child: Yes ppp100 Outgoing
5        UDP 172.15.16.2     28015<--> 172.15.16.2     28015[*.*.*.*       *] ttl
79 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
6        UDP 172.15.16.2     28014<--> 172.15.16.2     28014[*.*.*.*       *] ttl
79 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
7        UDP 172.15.16.2     28013<--> 172.15.16.2     28013[*.*.*.*       *] ttl
77 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
8        UDP 172.15.16.2     28012<--> 172.15.16.2     28012[*.*.*.*       *] ttl
77 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
9        UDP 172.15.16.2     28011<--> 172.15.16.2     28011[*.*.*.*       *] ttl
75 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
10       UDP 172.15.16.2     28010<--> 172.15.16.2     28010[*.*.*.*       *] ttl
75 sec bytes 0 pkts 0 ppp100 Outgoing CLONABLE UNINIT BY SIP
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show port-trigger

Use the **show port-trigger** command to display the port trigger information.

Syntax: **# show port-trigger**

Example: **adit 3500# show port-trigger**

```
Service ID:134217730    Enable     Service Name:L2TP
Trigger protocol: UDP   port: src_start=0       src_end=0    dst_start=1701
dst_end=1701

Service ID:16777223     Enable     Service Name:TFTP
Trigger protocol: UDP   port: src_start=1024    src_end=65535   dst_start=69
dst_end=69
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show pptpc

Use the **show pptps** command to display the PPTP connections or the PPTP connection details.

Syntax: **# show pptpc [pptpc** *connection-id*]

Field	Definition
connection-id	Enter the name of a connection.

Example: **adit 3500# show pptpc**

```
PPTP#0
PPTP#1
```

Example: **adit 3500# show pptpc pptpc 1**

```
Device = PPTPC-1
State = Disable
Status = Disabled
Schedule Availability = Always
MTU = 1460
Time Between  Reconnect Attempts = 0
Restart Timer = 600
PPP
On Demand = Disable
User Name =
Authentication = CHAP
Encryption = MPPE-40   MPPE-128   (Stateless)
IP Address =
Mask = 0.0.0.0
DNS Primary =    Secondary  =
Routing Mode = Route
SIP Alg = Enabled
Default Route = Disabled
Firewall = Disabled
Additional IP Address
IP Address                    Mask
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show pptps

Use the **show pptps** command to display the PPTP Server settings.

Syntax: **# show pptps**

Example: **adit 3500# show pptps**

```
state = Enable
status = Invalid vpn license
Idle_Time =  1200
Authentication =    MS-CHAP  MS-CHAPv2   PAP
Encryption = MPPE-40   MPPE-128   (Stateless)
Remote IP Address Range = 192.168.1.245 - 192.168.1.254
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show route

Use the **show route** command to display the routing table.

Syntax: **# show route**

Example: **adit 3500# show route**

```
Destination       Gateway           Flags Metric Interface
 192.168.1.0/24     *                 U     50     Ethernet 1
 192.168.1.0/24     *                 U     51     IPsec 1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show running-config

Use the **show running-config** command to display the current configuration of the system.

Syntax: **# show running-config**

Example: **adit 3500# show running-config**

```
ip host adit3500

log system notify none
log security notify none
log t1 notify none

clock source 1 t1 1
clock source 2 none

controller t1 1
     description T1 #1
     lbo short 133
     fdl none
     framing esf
     linecode b8zs
     loopdetect none
     loopback none
     idle-pattern 0x7f
     no pri-group
     no tdm-group
     no ds0-group
.
.
.
interface ethernet 1
     ip address 192.168.1.150 mask 255.255.255.0
     description LAN Hardware Ethernet Switch
     ip mtu auto
     no tos ip
     tos ip 0x0
     no ip primary-dns
     no ip secondary-dns
     no ip default-route
     no ip proxy-arp
     no ip rip
     ip rip receive-version 1or2
     ip rip send-version 2-bcast
     no sip-alg
     no firewall
     metric 50
     no shutdown
     speed auto
     full-duplex
     remote-admin enable
     no schedule-availability
.
.
.
ip dhcp pool ethernet 1
     start 192.168.1.1
     end 192.168.1.244
     subnet-mask 255.255.255.0
     lease 60

ip dhcp pool ethernet 2
     no dhcp pool
```


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```
no radius-server

voice-port trunk 1
     description  Trunk 1
     no comfort-noise
     connection t1 2
     no echo-cancel
     input-gain 0
     output-gain 0
     isdn switch-type primary-ni2

voice-port fxs 1
     description  Line 1
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     dial-timeout 5
     signal loop-start
.
.
.
voice-codec g711ulaw ptime 20
voice-codec g711alaw ptime 20
voice-codec g729 ptime 20

dial-peer voice pots trunk 1
     fax protocol none
     modem protocol none
     codec preference 1 g711ulaw
     codec preference 2 g711alaw
     codec preference 3 g729
     no sip-authentication

dial-peer voice pots fxs 1
     fax protocol none
     modem protocol none
     codec preference 1 g711ulaw
     codec preference 2 g711alaw
     codec preference 3 g729
     no calling-party-disconnect
     call-waiting enable
     no caller-id
     no sip-authentication
.
.
.
voice-service sip
     transport udp
     sip-port 5060
     rtp-base-port 28000
     dtmf rfc2833
     no proxy-server
     no outbound-proxy
     privacy-mode none
     no prack
     early-media auto
     proxy-type generic
     calling-party-disconnect 900
     feature-mode local
     no conference
     no call-fwd-indication
     phone-number 10
     session-timer 1800
```


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```
     session-timer refresher uac
     no session-timer mode
     redundancy type none
     redundancy ttl 3600
     redundancy rollback-timer 300
     redundancy advanced-timeout 2
     redundancy advanced-retries 3
     no filter-incoming
```

Example: **adit MSR# show running-config**

```
! Start of commands to eliminate default configuration
no voice-port trunk 1
interface serial 1
     shutdown
     exit
no interface serial 1
! End of commands to eliminate default configuration

ip host adit_MSR
ip domain-name home

log system notify none
log security notify none
log t1 notify none

no log pri
log pri buffer-size 50
log pri buffer-fill 0
log pri display 1

no log sip
log sip buffer-size 250
log sip buffer-fill 0
log sip level detailed
log sip display 1

clock source 1 none
clock source 2 none


interface ethernet 1
     ip address 10.0.0.3 mask 255.255.255.0
     description Ethernet 1
     no tos ip
     tos ip value 0x0
     no ip dhcp auto-provision
     no ip primary-dns
     no ip secondary-dns
     ip route-mode route
     no ip default-route
     no ip proxy-arp
     no ip rip
     ip rip receive-version 1or2
     ip rip send-version 2-bcast
     no firewall
     metric 50
     no shutdown
     speed auto
     full-duplex
     remote-admin enable
```


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```
     no schedule-availability
     ip ospf authentication null
     exit

interface ethernet 2
     ip address auto
     description Ethernet 2
     ip mtu auto
     ip dhcp auto-provision
     no ip primary-dns
     no ip secondary-dns
     ip route-mode napt
     ip default-route enable
     no ip proxy-arp
     no ip rip
     ip rip receive-version 1or2
     ip rip send-version 2-bcast
     sip-alg enable
     firewall enable
     metric 40
     no shutdown
     speed auto
     full-duplex
     no schedule-availability
     ip ospf authentication null
     exit

no ip dhcp pool ethernet 1

no ip dhcp pool ethernet 2

no radius-client

voice-port
     tos sip value 0xdc
     tos rtp value 0xb8
     digit-map short-timeout 4
     digit-map long-timeout 16
     digit-map pattern 1 [2-9]11
     digit-map pattern 2 [0-1][2-9]11
     digit-map pattern 3 0[#T]
     digit-map pattern 4 00
     digit-map pattern 5 *xx
     digit-map pattern 6 011x.[#T]
     digit-map pattern 7 [0-1]xxxxxxx[#T]
     digit-map pattern 8 [0-1][2-9]xxxxxxxxx
     digit-map pattern 9 [2-9]xxxxxxxxx
     digit-map pattern 10 [2-9]xxxxxx[#T]
     digit-map pattern 11 101xxxx.[#T]
     exit

voice-port trunk 1
     description Trunk 1
     trunk 000000005
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     isdn switch-type pri-ni2
     no digit-map
     no registration enable
     exit
```


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```
voice-port fxs
     no digit-map
     dial-timeout 5
     exit

voice-port fxs 1
     description Line 1
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     signal loop-start
     no per-line-logging
     no shutdown
     exit
.
.
.

voice-port fxs 48
     description Line 48
     no comfort-noise
     echo-cancel enable
     input-gain 0
     output-gain 0
     signal loop-start
     no per-line-logging
     no shutdown
     exit

voice-codec g711ulaw ptime 20
voice-codec g711alaw ptime 20

dial-peer voice pots trunk 1 1
     fax-protocol none
     modem-protocol none
     codec preference 1 g711ulaw
     codec preference 2 g711alaw
     no block-out-caller-id
     no sip-authentication
     exit

voice-service sip
     gateway-ip 0.0.0.0
     transport udp
     sip-port 5060
     rtp-base-port 28000
     dtmf rfc2833
     no proxy-server
     no outbound-proxy
     privacy-mode none
     no prack
     early-media auto
     proxy-type generic
     calling-party-disc 900
     feature-mode local
     no conference
     phone-number max-size 10
     session-timer timeout 1800
     session-timer refresher uac
     no session-timer mode
     registration rate 60
     registration expire 3600
```


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```
     registration retry-timeout 500
     registration tries 2
     registration failed-time 60
     registration window-size 10
     no registration ignore-negotiated enable
     redundancy type none
     fax-protocol-t38 signaling sdp-preferred
     fax-protocol-t38 ecs redundant
     fax-protocol-t38 ls-redundancy 3
     fax-protocol-t38 hs-redundancy 0
     exit


port-trigger service 134217730 enable
port-trigger service 16777223 enable


remote-admin telnet primary-port port 23
remote-admin telnet secondary-port port 8023
remote-admin telnet primary-secure-port port 992
remote-admin web primary-port port 80
remote-admin web secondary-port port 8080
remote-admin web primary-secure-port port 443
remote-admin web secondary-secure-port port 8443
no remote-admin snmp
no remote-admin icmp
no remote-admin udp

security-default typical

no date summer-time

snmp-server community public ro
snmp-server community private rw
snmp-server enable

no dynamic-dns interface
no dynamic-dns mail-exchanger

no mail-server authentication
mail-server port 25

no vlan
vlan
     tag-all disable
     port-priority Ethernet 1.1 0
     pvid Ethernet 1.1 1
     no port-dot1q Ethernet 1.1
     port-protocol-filter disable Ethernet 1.1
     port-priority Ethernet 2.1 0
     pvid Ethernet 2.1 1
     no port-dot1q Ethernet 2.1
     port-protocol-filter disable Ethernet 2.1
     exit


! IPSec General Config
     ipsec replay
     ipsec authentication-retries 5 delay 60
     no ipsec log ike auto-key
     no ipsec log ike ike-int
     no ipsec log ike ike-msg
     no ipsec log ike msg-byte
```


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```
      no ipsec log ike msg-enc-dec
      no ipsec log ike msg-inp
      no ipsec log ike msg-outp
      no ipsec log ike pri-key
      no ipsec log ike rej-packet
      no ipsec log ipsec atc
      no ipsec log ipsec emvc
      no ipsec log ipsec etc
      no ipsec log ipsec ip-ctc
      no ipsec log ipsec irtmc
      no ipsec log ipsec mirl
      no ipsec log ipsec rc
      no ipsec log ipsec rtmc
      no ipsec log ipsec satmc
      no ipsec log ipsec tc
      no ipsec log ipsec tsmc
      no ipsec log ipsec ttc
      no ipsec log ipsec usc
      no ipsec log ipsec vrp


pptps
     ppp authentication
     ppp encryption
     start-address 250.250.5.245
     end-address 250.250.5.254
     exit
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show service

Use the **show service** command to display all service information. **Note:** The following example, is only a portion of the list.

Syntax: **# show service**

Example: **adit 3500# show service**

```
Group:  Basic Web Utilities
Service ID:16777216     Service Name:All Traffic
Trigger protocol: NO PROTOCOL port: src_start=0    src_end=0      dst_start=0   dst_end=0
Service ID:16777217     Service Name:DNS
Trigger protocol: TCP   port: src_start=53      src_end=53       dst_start=53   dst_end=53
Service ID:16777217     Service Name:DNS
Trigger protocol: TCP   port: src_start=1024    src_end=65535    dst_start=53   dst_end=53
Service ID:16777217     Service Name:DNS
Trigger protocol: UDP   port: src_start=53      src_end=53       dst_start=53   dst_end=53
Service ID:16777217     Service Name:DNS
Trigger protocol: UDP   port: src_start=1024    src_end=65535    dst_start=53   dst_end=53
Service ID:16777218     Service Name:FTP
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=21   dst_end=21
Service ID:16777219     Service Name:HTTP
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=80   dst_end=80
Service ID:16777220     Service Name:HTTP Secondary
Trigger protocol: TCP   port: src_start=0      src_end=0       dst_start=8080   dst_end=8080
Service ID:16777221     Service Name:HTTPS
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=443   dst_end=443
Service ID:16777222     Service Name:HTTPS Secondary
Trigger protocol: TCP   port: src_start=0      src_end=0       dst_start=8443   dst_end=8443
Service ID:16777223     Service Name:TFTP
Trigger protocol: UDP   port: src_start=1024    src_end=65535    dst_start=69    dst_end=69
Service ID:16777224     Service Name:IMAP
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=143   dst_end=143
Service ID:16777225     Service Name:NNTP
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=119   dst_end=119
Service ID:16777226     Service Name:Ping
Trigger protocol: ICMP  port: src_start=0       src_end=0        dst_start=0     dst_end=0
Service ID:16777227     Service Name:POP3
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=110   dst_end=110
Service ID:16777228     Service Name:SNMP
Trigger protocol: UDP   port: src_start=0       src_end=0        dst_start=161   dst_end=161
Service ID:16777229     Service Name:SMTP
Trigger protocol: TCP   port: src_start=0       src_end=0        dst_start=25   dst_end=25
.
.
.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show users

Use the **show users** command to display all users on this system.

Syntax: **# show users**

Example: **adit 3500# show users**

```
Provisioned User List
  User-1 : admin   Access: ADMIN  <-
  User-2 : pauljones Access: ADMIN
 Active CLI Users
  User-1 : admin   Access:ADMIN     Authen:Config  from IP:192.168.1.1
  User-2 : admin   Access:ADMIN     Authen:Config  from Console
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

show version

Use the **show version** command to display the version for the hardware, software and firmware. The Admin level user will be provided with more information than Manager and Monitor levels. Software features are listed along with enabled status.

Syntax: **# show version**

Example: **adit 3500# show version**

```
Application Version: 1.4.0
Compilation Time: Mon Jan  5 2007 16:12:48
FPGA Version: 1.00
Board Version: 1 003-1215-0100
IXP400 Software Release: 1_4 SQA4_1
MSP:
    82530 - 60 channels
    Image File Name: TGW_v5_03_cdma.axf
    API Version    : 2.1.0
    Source IP Addr : 192.168.1.150
Voice Slot 1 : FXS Card Present: Rev  5.00 VIP
Vendor: Turin Networks
Product Features:
 SIP  enabled.
 G729A enabled.
```


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Example: **Adit MSR# show version**

```
Application Version: 2.0.0.5
Compilation Time: Thu Jan 31 2008 13:48:42
FPGA Version: 0.04
Boot Version: 1.14
Board Version: 0 003-1756-0001
Flash Size: 32M bytes
Memory Size: 64M bytes
IXP400 Software Release: 1_4 SQA4_1
MSP:
    82610 - 100 channels
    Image File Name: TGW_v5_05.axf
    API Version    : 2.1.0
    Source IP Addr : 10.10.4.202
MSR Card Slot: 5
CLEI Code: SITRAANBAA
Product Features:
 VPN  enabled.
 SIP  enabled.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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show voice-port fxs

Use the **show voice-port fxs** command to display the FXS voice port information.

Syntax: **# show voice-port fxs**

Example: **adit 3500# show voice-port fxs**

```
Registration Address: 172.32.1.15
SIP Proxy: Yes
Proxy Address: 172.32.1.18

* Line UID            PhoneStatus RegisStatus RX/TX/Lost(Pkts) Jitter Overflow
-------------------------------------------------------------------------------
Y 1    3035550001     Idle        Registered
Y 2    3035550002     Idle        Registered
Y 3    3035550003     Idle        Registered
Y 4    3035550004     Idle        Registered
```

Example: **adit MSR# show voice-port fxs**

```
Registration Address: 172.32.1.15
SIP Proxy: Yes
Proxy Address: 172.32.1.18

* Line UID           PhoneStatus RegisStatus RX/TX/Lost(Pkts) Jitter Overflow CrossConnect
-------------------------------------------------------------------------------------------
Y 1    3035550001     Idle        Registered                                   Connected
Y 2    3035550002     Idle        Registered                                   Connected
Y 3    3035550003     Idle        Registered                                   Connected
Y 4    3035550004     Idle        Registered                                   Connected
Y 5    3035550005     Idle        Registered                                   Connected
Y 6    3035550006     Idle        Registered                                   Connected
Y 7    3035550007     Idle        Registered                                   Connected
Y 8    3035550008     Idle        Registered                                   Connected
.
.
.
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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show voice-port trunk

Use the **show voice-port trunk** command to display the trunk voice port information.

Syntax: **# show voice-port trunk** *port*

Field	Definition
port	**Adit 3500:** DS1 (T1) interface. Value must be 1. **MSR:** Link Cross Connect (LCC). Range = 1-8.

Example: **adit 3500# show voice-port trunk 1**

```
 trunk-1 t1-1 does not exist
*******************************  PRI 2  ************************************
Channel no   Internal Call Id   Q931 Connection Id   Tdm TimeSlot   Call State
-------------------------------------------------------------------------------
 1             -1                  -1                -1             INACTIVE
 2             -1                  -1                -1             INACTIVE
 3             -1                  -1                -1             INACTIVE
 4             -1                  -1                -1             INACTIVE
 5             -1                  -1                -1             INACTIVE
 6             -1                  -1                -1             INACTIVE
 7             -1                  -1                -1             INACTIVE
 8             -1                  -1                -1             INACTIVE
 9             -1                  -1                -1             INACTIVE
10             -1                  -1                -1             INACTIVE
11             -1                  -1                -1             INACTIVE
12             -1                  -1                -1             INACTIVE
13             -1                  -1                -1             INACTIVE
14             -1                  -1                -1             INACTIVE
15             -1                  -1                -1             INACTIVE
16             -1                  -1                -1             INACTIVE
17             -1                  -1                -1             INACTIVE
18             -1                  -1                -1             INACTIVE
19             -1                  -1                -1             INACTIVE
20             -1                  -1                -1             INACTIVE
21             -1                  -1                -1             INACTIVE
22             -1                  -1                -1             INACTIVE
23             -1                  -1                -1             INACTIVE
 trunk-1 t1-3 does not exist
 trunk-1 t1-4 does not exist
```


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Example: **adit MSR# show voice-port trunk 1**

```
*******************************  PRI 1  ************************************
Channel no   Internal Call Id   Q931 Connection Id   Tdm TimeSlot   Call State
-------------------------------------------------------------------------------
 1             -1                  -1                -1             INACTIVE
 2             -1                  -1                -1             INACTIVE
 3             -1                  -1                -1             INACTIVE
 4             -1                  -1                -1             INACTIVE
 5             -1                  -1                -1             INACTIVE
 6             -1                  -1                -1             INACTIVE
 7             -1                  -1                -1             INACTIVE
 8             -1                  -1                -1             INACTIVE
 9             -1                  -1                -1             INACTIVE
10             -1                  -1                -1             INACTIVE
11             -1                  -1                -1             INACTIVE
12             -1                  -1                -1             INACTIVE
13             -1                  -1                -1             INACTIVE
14             -1                  -1                -1             INACTIVE
15             -1                  -1                -1             INACTIVE
16             -1                  -1                -1             INACTIVE
17             -1                  -1                -1             INACTIVE
18             -1                  -1                -1             INACTIVE
19             -1                  -1                -1             INACTIVE
20             -1                  -1                -1             INACTIVE
21             -1                  -1                -1             INACTIVE
22             -1                  -1                -1             INACTIVE
23             -1                  -1                -1             INACTIVE
 trunk 1 LCC#2 does not exist
 trunk 1 LCC#3 does not exist
 trunk 1 LCC#4 does not exist
 trunk 1 LCC#5 does not exist
 trunk 1 LCC#6 does not exist
 trunk 1 LCC#7 does not exist
 trunk 1 LCC#8 does not exist
```

Supported Platforms: **Adit 3500, MSR**

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traceroute

Use the **traceroute** command to trace a route to a remote host.

Syntax: **# traceroute**

Syntax: **# traceroute {***address*|*hostname*|**stop}**

Field	Definition
address	IP address of the remote host.
hostname	Host name of the remote host.
stop	Stop the traceroute process.

Example:
```
Adit 3500# traceroute to 192.168.1.200
(192.168.1.200), 10 hops max
1 192.168.1.200 (192.168.1.200) 10.500 ms 1.013 ms 0.926 ms
Traceroute: Destination Reached
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

upgrade

Use the **upgrade** command to upgrade the system software. **Note:** This requires the TFTP software to be running in the background.

Syntax: **# upgrade ip-address** *address* **file** *filename* **[check]**

Field	Definition
address	IP address of the TFTP server with the software upgrade file.
filename	Name of the software file to load on the system, this is a .rmt file.
check	Check only. Verify that the file is a software image file. Do not store the file as the software image

Example:
```
adit 3500# upgrade ip-address 192.168.1.1 file adit3500_1_0.rmt
WARNING: Upgrade starting. Do NOT issue new commands until done
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 4

Global Configuration Mode

The Global Configuration Mode allows commands to be entered directly to the router configuration. From this level, additional configuration modes can be entered. Once configuration is complete, use the **exit/end** command to return to the Privileged Mode prompt.

This Mode is entered with the **# configure terminal** command from the Privileged mode.

The Global Configuration Mode is represented by the **(config)#** prompt.

Note: The Trunk option is not available on the Adit 3104.

In This Chapter

- Commands for Entering Configuration Submodes
- Global Configuration Commands

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Commands for Entering Configuration Submodes

Configuration Mode	Link to Command	Prompt Displayed
Controller LCC	*controller lcc*	(config-cont-lcc-{n})#
Controller T1	*controller t1*	(config-cont-t1-{n})#
DHCP server pool	*ip dhcp pool ethernet*	(config-dhcp-eth-{n})#
Dial Peer FXS	*dial-peer voice pots fxs*	(config-dpeer-fxs)#
Dial Peer Trunk	*dial-peer voice pots trunk*	(config-dpeer-trk)#
Dial Peer VoIP	*dial-peer voice voip*	(config-dpeer-voip)#
Ethernet Interface	*interface ethernet*	(config-int-eth-{n})#
MLPPP Interface	*interface multilink*	(config-int-mlink-{n})#
Serial Interface	*interface serial*	(config-int-ser-{n})#
VPN IPSEC	*ipsec*	(config-ipsec-{n})#
VPN L2TP Client	*l2tpc*	(config-l2tpc-{n})#
OSPF	*router ospf*	(config-ospf)#
VPN PPTP Client	*pptpc*	(config-pptpc-{n})#
VPN PPTP Server	*pptps*	(config-pptps)#
RADIUS	*radius-client*	(config-radius)#
VLAN (Global)	*vlan (global)*	(config-vlan)#
VLAN (Port)	*vlan (vlan-id)*	(config-vlan-{n})#
Voice Port (Global)	*voice-port (global)*	(config-vport)#
Voice Port (FXS)	*voice-port fxs*	(config-vport-fxs-{n})#
Voice Port (Trunk)	*voice-port trunk*	(config-vport-trunk-{n})#
Voice Service SIP	*voice-service sip*	(config-voice-serv-sip)#

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Global Configuration Commands

- access
- access-control
- access-list
- authentication login
- clock source
- controller lcc
- controller t1
- date
- delete local-server
- dial-peer voice
- dmz-host
- do
- dynamic-dns
- end
- exit
- help
- history
- host-filter
- interface ethernet
- interface multilink
- interface serial
- ipsec
- ip dhcp pool ethernet
- ip domain-name
- ip host
- key
- l2tpc
- local-server
- log
- mail-server
- nat-bypass
- network-object
- no commands
- port-trigger service
- pptpc
- pptps
- radius-client
- remote-admin
- router ospf
- security-default
- security-log
- service
- snmp-server
- static-dns
- time-range
- username
- vlan (global)
- vlan (vlan-id)
- voice-codec
- voice-port (global)
- voice-port trunk
- voice-service sip

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access

Use the **access** command to enable remote access via LAN or WAN. To disable remote access, see *no access* command on page 4-36.

Syntax: **(config)# access {lan|wan} enable**

Field	Definition
lan	Enable remote access via the LAN.
wan	Enable remote access via the WAN.

Example: **(config)# access lan enable**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

access-control

Use the **access-control** command to configure an access (scheduler) rule for the system. To remove a rule, see *no access-control* command on page 4-36.

Syntax: **(config)# access-control** *name* **apply-to {lan|***object-name***} time-range {always|***schedule-id***} service** *service-id*

Field	Definition
name	Enter a name for the Access Control (Scheduler Rule), with a maximum of 64 characters.
lan	Apply this scheduler rule to the LAN interface.
object-name	Enter the Network Object name to apply the rule to.
always	Apply this rule always. Default.
schedule-id	A configured schedule to apply this rule.
service-id	Enter the service number to apply the rule to. **Note:** The Service ID number can be found with the *show service command, on page 3-61*

Example: **(config)# access-control AccessControl_1 apply-to lan time-range always service 16777220**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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access-list

Use the **access-list** command to configure the advanced filtering entries. To delete an access list, see *no access-list* command on page 4-37.

Syntax: **(config)# access-list rule {new|***rule-name***} apply {eth-lan|eth-wan|final|initial|ppp-wan} direction {in|out} operation {accept|accept-packet|drop|reject} time-range {always|***schedule-name***} src-host {***address***|***address-range***|any} dst-host {***address***|***address-range***|any} service** ***service-id*** **frag {enable|none} log {enable|none}**

Field	Definition
new	Create a new Access list rule. **Note: Do not use this *new* option when using an Automated Provisioning System.**
rule-name	Enter an existing rule name to apply this command to.
eth-lan	Ethernet LAN interface.
eth-wan	Ethernet WAN interface.
initial	Initial rules defined here will be applied first to the interface.
final	Final rules defined here will be applied last to the interface.
ppp-wan	PPP WAN interface.
in	Filter the incoming traffic only.
out	Filter the outgoing traffic only.
accept	Allow access to packets that match the criteria defined. The data transfer session will be handled using Stateful Packet Inspection (SPI), meaning that other packets matching this rule will be automatically allowed access.
accept-list	Allow access to packets that match the criteria defined. The data transfer session will not be handled using SPI, meaning that other packets matching this rule will not be automatically allowed access. This can be useful, for example, when creating rules that follow broadcasting.
drop	Deny access to packets that match the source and destination IP addresses and service ports defined above.
reject	Deny access to packets that match the criteria defined, and send an ICMP error or a TCP reset to the origination peer.
always	This rule will always take effect. Default.
schedule-name	Apply the defined schedule times to this rule.
src-host	The source address of packets sent or received from the LAN computer. This entry is mandatory when denying a rule. ***address*** - enter the source IP address ***address-range*** - enter a range of source IP addresses **any** - allow any IP address
dst-host	Destination address of packets sent/received from the network object. ***address*** - enter the destination IP address ***address-range*** - enter a range of destination IP addresses. **any** - allow any IP addresses.
service-id	Enter the service number to apply the rule to. **Note:** Service ID number can be displayed with the *show service command, on page 3-61***.**

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Field	Definition (Continued)
frag	**enable -** Enable fragmentation. **none -** Do not allow fragmentation.
log	Enable or disables logging of packets matched by this rule.

Example: `(config)# access-list rule new apply eth-lan direction in operation accept time-range always src-host any dst-host any service 16777220 frag none log none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

authentication login

Use the **authentication login** command to use RADIUS for login authentication. To remove an authentication login, see *no authentication login* command on page 4-37.

Syntax: `(config)# authentication login use-radius`

Example: `(config)# authentication login use-radius`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

clock source

Use the **clock source** command to define the primary and secondary clock source.

Syntax: `(config)# clock {1|2} source {none|t1` *port*`}`

Field	Definition
1|2	Sets the interface to the following clock source. **1** = Clock 1, primary clock source **2** = Clock 2, secondary clock source
none	Sets the clock source to internal.
t1 *port*	Sets the clock source to a DS1. Range is 1-4.

Example: `(config)# clock 1 source t1 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**
Not supported by the MSR card

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controller lcc

Use the **controller lcc** command to allow access to the Controller LCC configuration commands. See *Chapter 5, Configuration - LCC Controller Mode* for commands in this mode.

Syntax: `(config)# controller lcc` *number*

Field	Definition
number	Selects the Link Cross Connect. Range = 1-8

Example:
```
(config)# controller lcc 1
(config-cont-lcc-1)#
```

Supported Platforms: **MSR**

controller t1

Use the **controller t1** command to allow access to the Controller T1 configuration commands. See *Chapter 6, Configuration - T1 Controller Mode* for commands in this mode.

Syntax: `(config)# controller t1` *port*

Field	Definition
port	Selects the T1 (DS1) port. Adit 3104 Range = 1 Adit 3500 Range 1 - 4

Example:
```
(config)# controller t1 1
(config-cont-t1-1)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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date

date auto-time-update

Use the **date auto-time-update** command to automatically update the clock from the defined server. To stop the auto update, see *no date auto-time-update* command on page 4-37.

Syntax: **`(config)# date auto-time-update protocol {ntp|tod} server`** *`address1 [address2] [address3] [address4]`* **`update-every`** *`hours`*

Field	Definition
ntp	Network Time Protocol protocol. Default for Adit 3000.
tod	Time of Day protocol.
address1, address2, ...	Enter the IP Address of the Time Server. Additional addresses may be added for backup if the primary Time Server fails.
hours	Sets the amount of time between resets. Range 1-480 hours. Default is 24 hours.

Example: **`(config)# date auto-time-update protocol ntp server 192.168.1.1 update-every 24`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

Note: By default, Time of Day management for the MSR is provided by the Adit 600 controller.

date set

Use the **date set** command to manually set the internal clock.

Syntax: **`(config)# date set`** *`hh:mm:ss dd mm yyyy`*

Field	Definition
hh:mm:ss	Set the time in the 24 hour format hh:mm:ss **hh** = hours, range is 0 - 23 **mm** = minutes, range is 0 - 59 **ss** = seconds, range is 0 - 59
dd	**dd** = day, range is 1 - 31
mm	**mm** = month, range is 1 - 12
yyyy	Enter current year (example 2006). Range 1970 - 2037.

Example: **`(config)# date set 05:00:00 04 17 2006`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

Note: By default, Time of Day management for the MSR is provided by the Adit 600 controller. Use this command with the MSR only if you are using NTP or another time service and need to manually adjust the time due to a loss of contact with the server.

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date summer-time

Use the **date summer-time** command to update the clock for daylight savings time. To stop the update for daylight saving, see *no date summer-time* command on page 4-38.

Note: Default settings are start: 3/28 time 00:00, end: 10/28 time 01:00.

Syntax: **`(config)# date summer-time`** *`smonth sday shh:mm emonth eday ehh:mm offset`*

Field	Definition
smonth and emonth	The month in which daylight savings time starts (*smonth*) or ends (*emonth*). Range is 1-12.
sday and eday	The day on which daylight savings time starts (*sday*) or ends (*eday*). Range is 1-31.
shh:mm and ehh:mm	Start time (*shh:mm*) and end time (*ehh:mm*). hh = hour, range 00:59 mm = minutes, range 00:59
offset	This is an optional parameter, to set the offset of the daylight savings time. Range is 1-120, with a default of 60.

Example: **`(config)# date summer-time 03 28 00:00 10 28 01:00 60`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

Note: By default, Time of Day management for the MSR is provided by the Adit 600 controller. Use this command with the MSR only if you are using NTP or another time service and need to manually adjust the time due to a loss of contact with the server.

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date timezone

Use the **date timezone** command to set the time zone and the number of hours from the GMT.

Syntax: **`(config)# date timezone`** *`hh:mm`*

Field	Definition
hh	Hour offset from GMT. Range is from -12 to +12, with a default of 0.
mm	Minute offset from GMT in minutes. Range is from 00 to 59, with a default of 00. This is used for half hour time zones.

Example: **`(config)# date timezone -05:00`**

The example will set the time zone offset to be -5:00 from GMT (Greenwich Mean Time), which equates to Eastern Standard Time.

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

Note: By default, Time of Day management for the MSR is provided by the Adit 600 controller. Use this command with the MSR only if you are using NTP or another time service and need to manually adjust the time due to a loss of contact with the server.

delete local-server

Use the **delete local-server** command to delete a local server.

Syntax: **`(config)# delete local-server`** ***`server-id`***

Field	Definition
server-id	Server ID.

Example: **`(config)# delete local-server 192.168.1.200`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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dial-peer voice

dial-peer voice pots fxs

Use the **dial-peer voice pots fxs** command to allow access to the Dial Peer Voice FXS configuration commands. See *Chapter 8, Configuration - Dial Peer FXS Mode* for commands in this mode. For the no counterpart of this command see *no dial-peer voice pots fxs* command on page 4-38.

Syntax: `(config)# dial-peer voice pots fxs` *port*

Field	Definition
port	Selects the FXS port to configure. **Adit 3104:** Range is 1-24. **Adit 3500:** Range is 1-4. **MSR:** Range is 1-48.

Example:
```
(config)# dial-peer voice pots fxs 1
(config-dpeer-fxs)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

dial-peer voice pots trunk

Use the **dial-peer voice pots trunk** command to allow access to the Dial Peer Voice Trunk configuration commands. See *Chapter 9, Configuration - Dial Peer Trunk Mode* for commands in this mode. For the **no** counterpart of this command see *no dial-peer voice pots trunk* command on page 4-38. **Note:** This command is not supported on the Adit 3104.

Syntax: `(config)# dial-peer voice pots trunk` *port dest-port*

Field	Definition
port	Select the trunk port to configure. **Adit 3500:** Range = 1-4 **MSR:** Value must be 1.
dest-port	Set destination port. Range is 1-30.

Example:
```
(config)# dial-peer voice pots trunk 2 1
(config-dpeer-trk)#
```

Supported Platforms: **Adit 3500, MSR**

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dial-peer voice voip

Use the **dial-peer voice voip** command to allow access to the Dial Peer Voice VoIP configuration commands. See *Chapter 10, Configuration - Dial Peer VoIP Mode* for commands in this mode. For the no counterpart of this command see *no dial-peer voice voip* command on page 4-39.

Syntax: **`(config)# dial-peer voice voip`** *`trunk`*

Field	Definition
trunk	Enter trunk number. Range is 1-50.

Example:
```
(config)# dial-peer voice voip 1
(config-dpeer-voip)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

dmz-host

Use the **dmz-host** command to configure the DMZ host. To remove a DMZ host, see *no dmz-host* command on page 4-39.

Syntax: **`(config)# dmz-host`** *`address`* **`enable`**

Field	Definition
address	The IP address of the DMZ host.

Example:
```
(config)# dmz-host 10.10.200.1 enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2
enable command, on page 2-2
end command, on page 2-2
exit command, on page 2-3
help command, on page 2-3
history command, on page 2-4
ping command, on page 2-5
show command, on page 2-6
traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2
configure terminal command, on page 3-3
copy command, on page 3-3
date command, on page 3-4
debug command, on page 3-5
end command, on page 3-12
exit command, on page 3-12
help command, on page 3-13
history command, on page 3-14
log clear command, on page 3-15
no debug command, on page 3-16
ping command, on page 3-17
reload command, on page 3-18
show command, on page 3-19
traceroute command, on page 3-67
upgrade command, on page 3-67

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dynamic-dns

Use the **dynamic-dns** commands to configure the DNS Dynamic entries. To disable Dynamic DNS, see *no dynamic-dns* command on page 4-39.

dynamic-dns backup-mx

Use the **dynamic-dns backup-mx** command to enable the Dynamic DNS backup MX.

Syntax: `(config)# dynamic-dns backup-mx enable`

Example: `(config)# dynamic-dns backup-mx enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

dynamic-dns interface

Use the **dynamic-dns interface** command to define the Dynamic DNS connection to update.

Syntax: `(config)# dynamic-dns interface {eth-2|mlink-1|ser-n}`

Field	Definition
eth-2	Select Ethernet port 2.
mlink-1	Select Multilink port 1.
ser-*n*	Select serial interface 1-4.

Example: `(config)# dynamic-dns interface ser-1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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dynamic-dns mail-exchanger

Use the **dynamic-dns mail-exchanger** command to define the Dynamic DNS mail exchanger.

Syntax: **(config)# dynamic-dns mail-exchanger** *mail-exchanger*

Field	Definition
mail-exchanger	Enter your mail exchange server address, to redirect all E-mails arriving at your Dyndns address to your mail server.

Example: **(config)# dynamic-dns mail-exchanger 10.10.1.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

dynamic-dns offline

Use the **dynamic-dns offline** command to enable Dynamic DNS offline.

Syntax: **(config)# dynamic-dns offline enable**

Example: **(config)# dynamic-dns offline enable**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

dynamic-dns username

Use the **dynamic-dns username** command to define the Dynamic DNS username.

Syntax: **(config)# dynamic-dns username** *username*

Field	Definition
username	Enter your Dyndns user name.

Example: **(config)# dynamic-dns username JohnD**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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dynamic-dns wildcard

Use the **dynamic-dns wildcard** command to enable the Dynamic DNS wildcard.

Syntax: `(config)# dynamic-dns wildcard enable`

Example: `(config)# dynamic-dns wildcard enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end

Use the **end** command to exit the current configuration mode. **Note:** This command can be entered in any configuration mode with the same result.

Syntax: `(config)# end`

Example: `(config)# end`

`#`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config)# exit`

Example: `(config)# exit`

`#`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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help

Use the **help** command to display the help information for this command. **Note:** This can also be accomplished with a **?**. This command can be entered in any configuration mode.

Syntax: **(config)# help**
or (config)# ?

Example: **(config)# help**

```
?                       Display all commands
access                  Permit access via LAN/WAN
access-control          Configure access control entries
access-list             Define access list
authentication          Configure authentication method
clock                   Internal clock setting
controller              Enter Controller context
date                    Set time/date
delete                  Delete a feature
dial-peer               Enter Dial peer context
dmz-host                Configure the DMZ host
do                      Run Privileged and User mode commands
dynamic-dns             Configure DNS Dynamic entries
end                     End Configuration mode session
exit                    Exit from Configuration mode
help                    Display all commands
history                 Display past entered commands
host-filter             Configure IP/hostname filtering entries
interface               Configure Ethernet or Serial interface
ip                      Configure general IP parameters
ipsec                   Configure IPSEC parameters
key                     Enable software feature keys
l2tpc                   Configure L2TP client options
local-server            Add local server
log                     Configure logging
mail-server             Configure mail server options
nat-bypass              Configure NAT bypass
network-object          Configure network objects
no                      Disable features
port-trigger            Configure port trigger
pptpc                   Configure PPTP client options
.
.
.
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config)# history`

Example: `(config)# history`

```
clock source 1 none
date
date set 12:12:06 15 12 2006
date set 3:4:3
date set 12:12:20
date set 0:0:1
date summer-time 3 28 00:00 10 28 01:00 60
date timezone +03:00
dial-peer voice pots trunk 1 1
dial-peer voice voip
dmz-host 192.168.1.100 enable
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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host-filter

Use the **host-filter** command to configure the IP/host name filtering entries. To delete a host filter, see *no host-filter* command on page 4-40.

Syntax: **(config)# host-filter id** *filter-id* {**ip-address** *address*|**hostname** *hostname*} **apply-to** {**lan**|**network-object** *object-id*} **time-range** {**always**|*schedule-id*}

Field	Definition
filter-id	Enter a filter ID name.
address	Enter the host IP address.
hostname	Enter a host name for the rule.
lan	Apply the filter the LAN interface.
network-object *object-id*	Apply the filter to a defined network object.
always	Set the time range to always.
schedule-id	Enter defined schedule ID name with schedule to apply to this filter.

Example:
```
(config)# host-filter id filterID ip-address 192.168.1.100
apply-to lan time-range always
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

interface ethernet

Use the **interface ethernet** command to allow access to the Ethernet interface configuration commands. See *Chapter 11, Configuration - Ethernet Interface Mode* for commands in this mode.

Syntax: **(config)# interface ethernet** *port*

Field	Definition
port	Ethernet port. Range 1-2.

Example:
```
(config)# interface ethernet 1

(config-int-eth-1)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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interface multilink

Use the **interface multilink** command to allow access to the MLPPP configuration commands. See *Chapter 12, Configuration - Multilink Interface Mode* for commands in this mode. To delete a Multilink interface, see *no interface multilink* command on page 4-42.

Syntax: **`(config)# interface multilink`** *`group-number`*

Field	Definition
group-number	Enter multilink group number. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range = 1-8.

Example:
```
(config)# interface multilink 1
(config-int-mlink-1)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

interface serial

Use the **interface serial** command to allow access to the serial interface configuration commands. See *Chapter 13, Configuration - Serial Interface Mode* for commands in this mode. To delete a serial interface, see *no interface serial* command on page 4-42.

Syntax: **`(config)# interface serial`** *`port`*

Field	Definition
port	**Adit 3104:** Value must be 1. **Adit 3200, Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.

Example:
```
(config)# interface serial 1
(config-int-ser-1)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ipsec

Use the **ipsec** commands to create an IPSec connection and to configure IPSec global settings. See *Chapter 14, Configuration - IPSec Mode* for additional commands in this mode.

ipsec authentication-retries

Use the **ipsec authentication-retries** command to enable the block-ip feature. To disable block-ip, see *no ipsec authentication-retries* command on page 4-40.

Syntax: `(config)# ipsec authentication-retries` *`number`* `delay` *`seconds`*

Field	Definition
number	The maximum number of retries for authentication. Range is 0-2147483647, with a default of 5.
seconds	The time delay after retries. Range is 0-2147483647 seconds, with a default of 60.

Example: `(config)# ipsec authentication-retries 10 delay 45`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ipsec key generate key

Use the **ipsec key generate key** command to generate a new public RSA key.

Syntax: `(config)# ipsec key generate key`

Example: `(config)# ipsec key generate key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ipsec log ike

Use the **ipsec log ike** command to enable Internet Key Exchange (IKE) related logs. To disable IKE logging, see *no ipsec log ike* command on page 4-40

Syntax: `(config)# ipsec log ike {auto-key|ike-int|ike-msg|msg-byte|msg-enc-dec|msg_inp|msg-outp|pri-key|rej-packet}`

Field	Definition
auto-key	Enable verbose automatic keying.
ike-int	Enable verbose IKE IPSec interaction.
ike-msg	Print all IKE message ignoring rate limit.
msg-byte	Enable message's raw byte option.
msg-enc-dec	Enable message's encryption and decryption.
msg_inp	Enable message's input structure.
msg-outp	Enable message's output structure.
pri-key	Enable verbose private key.
rej-packet	Enable verbose IKE reject packets.

Example: `(config)# ipsec log ike msg-outp`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ipsec log ipsec

Use the **ipsec log ipsec** command to enable IPSec related logs. To disable IPSec logging, see *no ipsec log ipsec* command on page 4-41.

Syntax: `(config)# ipsec log ipsec {atc|emvc|etc|ip-ctc|irtmc|mirl|rc|rtmc|satmc|tc|tsmc|ttc|usc|vrp}`

Field	Definition
atc	Authentication Transforms Code.
emvc	Even More Verbose Output.
etc	Encryption Transforms Code.
ip-ctc	IP Compression Transforms Code.
irtmc	Internal Route Table Manipulation Code.
mirl	Print all IPSec Messages Ignoring Rate Limit.
rc	Receive Code.
rtmc	Radij Tree Manipulation Code.
satmc	Secure Association Table Manipulation Code.
tc	Tunneling Code.
tsmc	Transform Selection and Manipulation Code.
ttc	Tunneling Transmit Code.
usc	User-Space Communication Code.
vrp	Verbose Rejected Packets.

Example: `(config)# ipsec log ipsec tc`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ipsec net-to-host

Use the **ipsec net-to-host** command to create a network-to-host connection.

Syntax: `(config)# ipsec net-to-host remote-ip {`*address*`|any} pre-share` *secret*

Field	Definition
address	Specify a remote tunnel endpoint address.
any	Allow any IP address.
secret	Enter a pre-shared secret string.

Example: `(config)# ipsec net-to-host remote-ip 192.168.1.200 pre-share mysecret`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ipsec net-to-net

Use the **ipsec net-to-net** command to create a network-to-network connection.

Syntax: **(config)# ipsec net-to-net remote-ip {***address***|any} remote-subnet {ip** ***address*** **mask** ***mask***|**any} pre-share** ***secret***

Field	Definition
remote-ip	*address* - Enter the remote tunnel endpoint address. **any** - Allow any IP address.
remote-subnet	*address* - Enter an IP address if it is a remote IP. *mask* - Enter an IP mask if it is a remote IP. **any** - Allow any IP address.
secret	Enter a pre-shared secret string.

Example: **(config)# ipsec net-to-host remote-ip 10.10.1.1 pre-share mysecret**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ipsec replay

Use the **ipsec replay** command to enable anti-replay protection. To disable anti-replay protection, see *no ipsec replay* command on page 4-41.

Syntax: **(config)# ipsec replay**

Example: **(config)# ipsec replay**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ipsec vpn_ipsec

Use the **ipsec vpn_ipsec** command to allow access to configuration commands for a specific IPSec connection. See *Chapter 14, Configuration - IPSec Mode* for commands in this mode. To delete this interface, see *no ipsec vpn_ipsec* command on page 4-42.

Note: This connection must be created first. See *ipsec net-to-host* command on page 4-23 and *ipsec net-to-net* command on page 4-24 to create an IPSec connection.

Syntax: **(config)# ipsec vpn_ipsec** ***connection-id***

Field	Definition
connection-id	Enter the name of a connection.

Example: **(config)# ipsec vpn_ipsec 1**

(config-ipsec-1)#

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip dhcp pool ethernet

Use the **ip dhcp pool ethernet** command to allow access to the DHCP configuration commands. See *Chapter 7, Configuration - DHCP Pool Ethernet Mode* for commands in this mode. For the no counterpart, see *no ip dhcp pool ethernet* command on page 4-43.

Syntax: `(config)# ip dhcp pool ethernet` *port*

Field	Definition
port	Selects the Ethernet port to configure. Range is 1-2.

Example:
```
(config)# ip dhcp pool ethernet 1
(config-dhcp-eth-1)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip domain-name

Use the **ip domain-name** command to sets system domain name.

Syntax: `(config)# ip domain-name` *name*

Field	Definition
name	Enter the domain name of the device.

Example:
```
(config)# ip domain-name mydomain.com
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip host

Use the **ip host** command to set the host name for this device.

Syntax: `(config)# ip host` *hostname*

Field	Definition
hostname	Enter the name of the host. Default is adit3500, adit3104, or aditMSR (depending on the platform).

Example:
```
(config)# ip host gateway1
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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key

Use the **key** command to enable a specific keyed feature. To acquire a feature key code, contact Turin Networks Customer Support. To disable a keyed feature, see the *no key* command on page 4-43.

Syntax: **(config)# key** *key-code*

Field	Definition
key-code	Enter the key code to enable the feature.

Example: **(config)# key q0B8yma2IsSL+1BarY0u**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

l2tpc

Use the **l2tpc** command to allow access to the VPN L2TP Connection configuration commands. See *Chapter 15, Configuration - L2TPC Mode* for commands in this mode. To delete an existing connection, see the *no l2tpc* command on page 4-43.

Syntax: **(config)# l2tpc {l2tpc** *connection-id*|**address** *address* **[ipsec local-secret** *secret*] **[local-secret** *secret*]**}**

Field	Definition
connection-id	Enter the connection ID (number).
address	Enter the IP address of the destination.
ipsec	Optional parameter. Directs IPSec to create an L2TP connection. Requires the **local-secret** option.
local-secret *secret*	Optional parameter. Enter a secret password used to authenticate L2TP connection. Maximum number of characters is 96.

Example: **(config)# l2tpc l2tpc 1**

(config-l2tpc-1)#

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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local-server

Use the **local-server** command to configure the local server entries. To delete a local server, see the *no local-server* command on page 4-44.

Syntax: **(config)# local-server id {***name***|new} {ip-address** *address* **|hostname** *hostname***} time-range {always|***schedule-name***} fwd-port** *port* **service** *service-id*

Field	Definition
name	Enter a name of the server.
new	Select New to create a new local server.
address	Enter an IP address of the local server.
hostname	Enter a host name of the server.
always	Set the time range to
schedule-name	Enter a defined schedule to be applied to the server.
port	Enter a forwarding port.
service-id	Enter the service number to apply the rule to. **Note:** The Service ID number is displayed with the *show service command, on page 3-61*

Example: **(config)# local-server id Boulder-server ip-address 10.10.2.100 time-range always fwd-port 2 service 16777220**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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log

log lcc buffer

Use the **log lcc buffer** command to set the buffer size allowed for the Link Cross-Connect (LCC) log buffer.

Syntax: **`(config)# log lcc buffer`** *`kilobytes`*

Field	Definition
kilobytes	Set the size of the LCC log buffer. Range is 1 - 256 KB. Default is 16KB.

Example: **`(config)# log lcc buffer 24`**

Supported Platforms: **MSR**

log lcc notify

Use the **log lcc notify** command to set the remote Link Cross-Connect (LCC) notify level.

Syntax: **`(config)# log lcc notify {error|info|ip-address`** *`address`* **`|none|warn}`**

Field	Definition
error	Notify for error level.
info	Notify for information level.
ip-address *address*	Enter IP address of remote system to notify.
none	No notification.
warn	Notify for warning level.

Example: **`(config)# log lcc notify warn`**

Supported Platforms: **MSR**

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log pri

Use the **log pri** command to configure PRI logging.

Syntax: `(config)# log pri {buffer-fill {0|1}|buffer-size` *kilobytes* `|display` *number*`|enable}`

Field	Definition
buffer-fill {0|1}	Define the method of loading the buffer. **0 = Circular Buffer** - the buffer will store a continuous stream of data by starting again at the beginning of the buffer after reaching the end. Default. **1 = Fill Until Full** - the buffer will fill until it is full. The user will have to clear the log manually.
buffer-size *kilobytes*	Configure the PRI log size. Range is 1-250 KB, with a default of 100 KB.
display *number*	Defines the number of lines per message. 0 = full
enable	Enable PRI logging.

Example: `(config)# log pri buffer-fill 0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

log security buffer

Use the **log security buffer** command to set the buffer size allowed for the security log buffer.

Syntax: `(config)# log security buffer` *kilobytes*

Field	Definition
kilobytes	Set the size of the Security log buffer. Range is 1-256 KB. Default is 16KB.

Example: `(config)# log security buffer 24`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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log security notify

Use the **log security notify** command to set the remote security notify level.

Syntax: **`(config)# log security notify {error|info|ip-address`** *`address`* **`|none|warn}`**

Field	Definition
error	Notify for error level.
info	Notify for information level.
ip-address *address*	Enter IP address of remote system to notify.
none	No notification.
warn	Notify for warning level.

Example: **`(config)# log security notify warn`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

log sip

Use the **log sip** command to configure SIP logging. To stop a SIP log, see *no log sip* command on page 4-44.

Syntax: **`(config)# log sip {buffer-fill {0|1}|buffer-size`** *`kilobytes`* **`|display`** *`number`*`|`**`enable|level {detail|non-detailed}}`**

Field	Definition
buffer-fill {0|1}	Define the method of loading the buffer. **0 = Circular Buffer** - the buffer will store a continuous stream of data by starting again at the beginning of the buffer after reaching the end. Default. **1 = Fill Until Full** - the buffer will fill until it is full. The user will have to clear the log manually.
buffer-size *kilobytes*	Configure the SIP log size. Range is 1 - 250 KB, with a default of 100 KB.
display *number*	Defines the number of lines per message. 0 = full
enable	Enable SIP logging.
level	Defines the logging level. **detailed** - Set logging level to detail. **non-detailed** - Set logging level to non-detail

Example: **`(config)# log sip buffer-fill 0`**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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log system buffer

Use the **log system buffer** command to set the buffer size allowed for the system log buffer.

Syntax: **`(config)# log system buffer`** *`kilobytes`*

Field	Definition
kilobytes	Set the size of the system log buffer. Range is 1 - 256 KB. Default is 16KB.

Example: **`(config)# log system buffer 24`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

log system notify

Use the **log system notify** command to set the remote system notify level.

Syntax: **`(config)# log system notify {error|info|ip-address`** *`address`* **`|none|warn}`**

Field	Definition
error	Notify for error level.
info	Notify for information level.
ip-address *address*	Enter IP address of remote system to notify.
none	No notification.
warn	Notify for warning level.

Example: **`(config)# log system notify error`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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log t1 buffer

Use the **log t1 buffer** command to set the buffer size allowed for the T1 log buffer.

Syntax: **(config)# log t1 buffer** *kilobytes*

Field	Definition
kilobytes	Set the size of the T1 log buffer. Range is 1 - 256 KB. Default is 16KB.

Example: **(config)# log t1 buffer 24**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

log t1 notify

Use the **log t1 notify** command to set the remote T1 notify level.

Syntax: **(config)# log t1 notify {error|info|ip-address** *address* **|none|warn}**

Field	Definition
error	Notify for error level.
info	Notify for information level.
ip-address *address*	Enter IP address of remote system to notify.
none	No notification.
warn	Notify for warning level.

Example: **(config)# log t1 notify warn**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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mail-server

mail-server authentication enable

Use the **mail-server authentication enable** command to enable the outgoing mail server authentication. To disable the mail-server authentication, see *no mail-server authentication* command on page 4-44.

Syntax: `(config)# mail-server authentication enable`

Example: `(config)# mail-server authentication enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

mail-server from-address

Use the **mail-server from-address** command to set the outgoing mail server from an e-mail address.

Syntax: `(config)# mail-server from-address` *address*

Field	Definition
address	Enter the "from e-mail" address.

Example: `(config)# mail-server from-address xxx@turinnetworks.com`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

mail-server host

Use the **mail-server host** command to set the outgoing mail server.

Syntax: `(config)# mail-server host` *address*

Field	Definition
address	Outgoing mail server IP address.

Example: `(config)# mail-server host 192.168.1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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mail-server port

Use the **mail-server port** command to set the outgoing mail server port.

Syntax: **(config)# mail-server port** *port*

Field	Definition
port	Enter the port number. Range is 0 - 65535. Default is 25.

Example: **(config)# mail-server port 25**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

mail-server username

Use the **mail-server username** command to set the username and password for the mail server.

Syntax: **(config)# mail-server username** *username* **password** *password*

Field	Definition
username	Enter the mail server username.
password	Enter the mail server password for this server.

Example: **(config)# mail-server username server10 password secret10**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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nat-bypass

Use the **nat-bypass** command to create and enable a NAT bypass rule. To disable NAT Bypass, see *no nat-bypass* command on page 4-44.

Syntax: **(config)# nat-bypass ip-address** *address* **mask** *mask* **[enable]**

Field	Definition
address	Enter a NAT bypass IP address.
mask	Enter a subnet mask for the above address.
enable	Enable NAT bypass. **Note:** To create the rule without enabling, do not enter this option.

Example: **(config)# nat-bypass ip-address 10.10.2.1 mask 255.255.255.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

network-object

Use the **network-object** command to configure a network object with the system. To delete a network object, see *no network-object* command on page 4-45.

Syntax: **(config)# network-object id** *object-id* **description** *text* **type {hostname** *hostname*|**ip-address** *address*|**mac-address** *mac-address***}**

Field	Definition
object-id	Enter the numerical ID for the Network Object.
text	Enter a description of the Network Element.
hostname	Enter the host name of the Network Object.
address	Enter the IP address of the Network Element.
mac-address	Enter the MAC address of the Network Element (xx:xx:xx:xx:xx:xx)

Example: **(config)# network-object id 1 description Unit1 type ip-address 192.168.1.200**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no access

Use the **access** command to disable remote access via LAN or WAN. To enable remote access, see *access* command on page 4-4.

Syntax: `(config)# no access {lan|wan}`

Field	Definition
lan	Disable access to the unit via the LAN.
wan	Disable access to the unit via the WAN.

Example: `(config)# no access lan`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no access-control

Use the **no access-control** command to remove an access rule for the system. To add an access rule, see *access-control* command on page 4-4.

Syntax: `(config)# no access-control` *name*

Field	Definition
name	Enter a current Access Control (Scheduler Rule).

Example: `(config)# no access-control AccessControl1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no access-list

Use the **no access-list** command to remove an advanced filtering entry. To add a filter, see *access-list* command on page 4-5.

Syntax: `(config)# no access-list rule rule-name apply {eth-lan|eth-wan|ppp-wan|initial|final}`

Field	Definition
rule-name	Enter an existing rule name to apply this command to.
eth-lan	Ethernet LAN interface.
eth-wan	Ethernet WAN interface.
initial	Initial rules defined here will be applied first to the interface.
final	Final rules defined here will be applied last to the interface.
ppp-wan	PPP WAN interface.

Example: `(config)# no access-list rule TestRule-1 apply eth-lan`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no authentication login

Use the **no authentication login** command to disable RADIUS for login authentication. To enable RADIUS login authentication, see *authentication login* command on page 4-6.

Syntax: `(config)# no authentication login use-radius`

Example: `(config)# no authentication login use-radius`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no date auto-time-update

Use the **no date auto-time-update** command to stop the automatic update the clock from the defined server. To enable automatic update of the clock, see *date auto-time-update* command on page 4-8.

Syntax: `(config)# no date auto-time-update`

Example: `(config)# no date auto-time-update`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no date summer-time

Use the **no date summer-time** command to remove daylight savings time setting. To enable daylight savings, see *date summer-time* command on page 4-9.

Syntax: `(config)# no date summer-time`

Example: `(config)# no date summer-time`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**
Not supported by the MSR

no dial-peer voice pots fxs

Use the **no dial-peer voice pots fxs** command denies access to the Dial Peer Voice POTS FXS configuration commands. To allow access, see *dial-peer voice* command on page 4-11.

Syntax: `(config)# no dial-peer voice pots fxs` *port*

Field	Definition
port	Selects the FXS port to configure. **Adit 3104:** Range is 1-24. **Adit 3500:** Range is 1-4. **MSR:** Range is 1-48.

Example: `(config)# no dial-peer voice pots fxs 2 1`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no dial-peer voice pots trunk

Use the **no dial-peer voice pots trunk** command denies access to the Dial Peer Voice POTS trunk configuration commands. To enable access, see *dial-peer voice* command on page 4-11.
Note: This command is not supported on the Adit 3104.

Syntax: `(config)# no dial-peer voice pots trunk` *port tag*

Field	Definition
port	Select the trunk port. **Adit 3500:** Range = 1-4 **MSR:** Value must be 1.
tag	Set destination range. Range is 1-30.

Example: `(config)# no dial-peer voice pots trunk 2 1`

Supported Platforms: **Adit 3500, MSR**

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no dial-peer voice voip

Use the **no dial-peer voice voip** command denies access to the Dial Peer Voice VoIP configuration commands. To allow access, see *dial-peer voice* command on page 4-11.

Syntax: `(config)# no dial-peer voice voip tag`

Field	Definition
tag	Enter the tag number to denies access. Range is 1-30.

Example: `(config)# no dial-peer voice voip 1`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no dmz-host

Use the **no dmz-host** command to remove a DMZ host. To add a DMZ hose, see *dmz-host* command on page 4-12.

Syntax: `(config)# no dmz-host address`

Field	Definition
address	The IP address of the DMZ host.

Example: `(config)# no dmz-host 10.10.200.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no dynamic-dns

Use the **no dynamic-dns** commands to disable DNS Dynamic entries. To enable DNS Dynamic entries, see *dynamic-dns* command on page 4-14.

Syntax: `(config)# no dynamic-dns {backup-mx|interface|mail-exchanger|offline|wildcard}`

Field	Definition
backup-mx	Disable DNS Dynamic Backup MX.
interface	Specify DNS Dynamic connection to update.
mail-exchanger	Remove mail exchanger.
offline	Disable DNS Dynamic offline.
wildcard	Disable DNS Dynamic wildcard.

Example: `(config)# no dynamic-dns backup-mx`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no host-filter

Use the **no host-filter** command to remove a IP host name filter entry. To add a IP host name, see *host-filter* command on page 4-19.

Syntax: **(config)# no host-filter** *name*

Field	Definition
name	Name of an existing IP host name to remove.

Example: **(config)# no host-filter HostFilter1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ipsec authentication-retries

Use the **no ipsec authentication-retries** command to disable the block-ip feature. To enable block-ip, see the *ipsec authentication-retries* command on page 4-21.

Syntax: **(config)# no ipsec authentication-retries**

Example: **(config)# no ipsec authentication-retries**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ipsec log ike

Use the no ipsec log ike command to disable Internet Key Exchange (IKE) related logs. To enable IKE logging, see *ipsec log ike* command on page 4-22

Syntax: **(config)# no ipsec log ike {auto-key|ike-int|ike-msg|msg-byte|msg-enc-dec|msg_inp|msg-outp|pri-key|rej-packet}**

Field	Definition
auto-key	Enable verbose automatic keying.
ike-int	Enable verbose IKE IPSec interaction.
ike-msg	Print all IKE message ignoring rate limit.
msg-byte	Enable message's raw byte option.
msg-enc-dec	Enable message's encryption and decryption.
msg_inp	Enable message's input structure.
msg-outp	Enable message's output structure.
pri-key	Enable verbose private key.
rej-packet	Enable verbose IKE reject packets.

Example: **(config)# no ipsec log ike msg-outp**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ipsec log ipsec

Use the no **ipsec log ipsec** command to disable IPSec related logs. To enable IPSec logging, see *ipsec log ipsec* command on page 4-23

Syntax: `(config)# no ipsec log ipsec {atc|emvc|etc|ip-ctc|irtmc|mirl|rc|rtmc|satmc|tc|tsmc|ttc|usc|vrp}`

Field	Definition
atc	Authentication Transforms Code.
emvc	Even More Verbose Output.
etc	Encryption Transforms Code.
ip-ctc	IP Compression Transforms Code.
irtmc	Internal Route Table Manipulation Code.
mirl	Print all IPSec Messages Ignoring Rate Limit.
rc	Receive Code.
rtmc	Radij Tree Manipulation Code.
satmc	Secure Association Table Manipulation Code.
tc	Tunneling Code.
tsmc	Transform Selection and Manipulation Code.
ttc	Tunneling Transmit Code.
usc	User-Space Communication Code.
vrp	Verbose Rejected Packets.

Example: `(config)# no ipsec log ipsec tc`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ipsec replay

Use the **no ipsec authentication-retries** command to disable anti-replay protection. To enable the anti-replay protection, see the *ipsec replay* command on page 4-24.

Syntax: `(config)# no ipsec replay`

Example: `(config)# no ipsec replay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ipsec vpn_ipsec

Use the **no ipsec vpn_ipsec** command to delete an IPSec connection.
To create an IPSec connection, see *ipsec net-to-host* command on page 4-23 or *ipsec net-to-net* command on page 4-24

To enter an IPSec connection, for configuration see *ipsec vpn_ipsec* command on page 4-24.

Syntax: **`(config)# no ipsec ipsec`** *`connection-id`*

Field	Definition
connection-id	Enter the name of a connection.

Example: **`(config)# no ipsec ipsec 1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no interface multilink

Use the **no interface multilink** command denies access to the MLPPP configuration commands. To enter the Multilink interface configuration mode, see the *interface multilink* command on page 4-20.

Syntax: **`(config)# no interface multilink`** *`group-number`*

Field	Definition
group-number	Enter multilink group number. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range = 1-8.

Example: **`(config)# no interface multilink 1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no interface serial

Use the **no interface serial** command denies access to the serial interface configuration commands. To enter the serial interface configuration mode, see *interface serial* command on page 4-20.

Syntax: **`(config)# no interface serial`** *`port`*

Field	Definition
port	**Adit 3104:** Value must be 1. **Adit 3200, Adit 3500:** Range = 1-4. **MSR:** Range = 1-8.

Example: **`(config)# no interface serial 1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip dhcp pool ethernet

Use the DHCP Pool **no ip dhcp pool ethernet** command to disable the DHCP server for the interface defined. To enter the DHCP configuration mode, see *ip dhcp pool ethernet* command on page 4-25.

Syntax: **(config)# no ip dhcp pool ethernet** *port*

Field	Definition
port	Ethernet port number. 1 or 2.

Example: **(config)# no ip dhcp pool ethernet 2**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no key

Use the **no key** command to disable a keyed feature. To enable a keyed feature, see the *key* command on page 4-26.

Syntax: **(config)# no key** *key-code*

Field	Definition
key-code	Enter the key code to disable the feature.

Example: **(config)# no key q0B8yma2IsSL+1BarY0u**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no l2tpc

Use the **no l2tpc** command to disable the VPN L2TPC. To enter the VPN L2TPC configuration mode, see the *l2tpc* command on page 4-26.

Syntax: **(config)# no l2tpc {l2tpc** *connection-id*|**address** *address*}

Field	Definition
connection-id	Enter the name of a connection.
address	Enter a destination IP address.

Example: **(config)# no l2tpc l2tpc 1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no local-server

Use the **no local-server** command to disable a local server. To enable a local server, see *local-server* command on page 4-27.

Syntax: `(config)# no local-server name`

Field	Definition
name	Enter a name of the server to remove.

Example: `(config)# no local-server BoulderServer`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no log sip

Use the **no log sip** command to stop SIP logging. To enable SIP logging, see *log sip* command on page 4-30.

Syntax: `(config)# no log sip`

Example: `(config)# no log sip`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no mail-server authentication

Use the **no mail-server authentication** command to disable the outgoing mail server authentication. To enable the mail server, see *mail-server* command on page 4-33.

Syntax: `(config)# no mail-server authentication`

Example: `(config)# no mail-server authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no nat-bypass

Use the **no nat-bypass** command to disable the NAT bypass feature. To enable NAT bypass, see *nat-bypass* command on page 4-35.

Syntax: `(config)# no nat-bypass ip-address address mask mask [enable]`

Field	Definition
address	Enter a NAT bypass IP address.
mask	Enter a subnet mask for the above address.
enable	Disable NAT bypass.

Example: `(config)# no nat-bypass ip-address 192.168.1.50 mask 255.255.255.0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no network-object

Use the **no network-object** command to remove network objects. To enable a network object, see *network-object* command on page 4-35.

Syntax: **(config)# no network-object id** *object-id* **type {hostname** *hostname*|**ip-address** *address*|**mac-address** *mac-address*}

Field	Definition
object-id	Enter the numerical ID of the Network Object.
hostname	Enter the host name of the Network Object.
address	Enter the IP address of the Network Element.
mac-address	Enter the MAC address of the Network Element (xx:xx:xx:xx:xx:xx)

Example: **(config)# no network-object id 1 type ip-address 192.168.1.200**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no port-trigger-service

Use the **no port-trigger-service** command to remove a port-triggering entry. To configure port triggering, see *port-trigger service* command on page 4-53.

Syntax: **(config)# no port-trigger-service** *name*

Field	Definition
name	Enter service name.

Example: **(config)# no port-trigger-service servicename2**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no pptpc

Use the **no pptpc** command to disable the VPN PPTP client. To enter the VPN PPTP Client configuration mode, see the *pptpc* command on page 4-53.

Syntax: **(config)# no pptpc {pptpc** *connection-id*|**address** *address*}

Field	Definition
connection-id	Enter the name of a connection.
address	Enter a destination IP address.

Example: **(config)# no pptpc pptpc 1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no pptps

Use the **no pptps** command to disable the VPN PPTP server. To enter the VPN PPTPS configuration mode, see the *pptps* command on page 4-53.

Syntax: `(config)# no pptps`

Example: `(config)# no pptps`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no radius-client

Use the **no radius-client** command disables the RADIUS configuration. To enter the RADIUS configuration mode, see *radius-client* command on page 4-54.

Syntax: `(config)# no radius-client`

Example: `(config)# no radius-client`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no remote-admin icmp

Use the **no remote-admin icmp** command to remove access of ICMP echo requests (ping and ICMP traceroute queries). To enable ICMP echo requests, see *remote-admin icmp* command on page 4-54.

Syntax: `(config)# no remote-admin icmp`

Example: `(config)# no remote-admin icmp`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no remote-admin snmp

Use the **no remote-admin snmp** command to remove SNMP control and diagnostic requests. To enable SNMP, see *remote-admin snmp* command on page 4-54.

Syntax: `(config)# no remote-admin snmp`

Example: `(config)# no remote-admin snmp`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no remote-admin telnet

Use the **no remote-admin telnet** command to remove remote administration via Telnet. To enable remote access via telnet, see *remote-admin telnet* command on page 4-55.

Syntax: `(config)# no remote-admin telnet {primary-port|primary-secure-port|secondary-port`

Field	Definition
primary-port	Primary Telnet port, default port 23
primary-secure-port	Secure Telnet over SSL port, default port 992
secondary-port	Secondary Telnet port, default port 8023

Example: `(config)# no remote-admin telnet primary-port`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no remote-admin udp-trace

Use the **no remote-admin udp-trace** command to remove remote access to UDP traceroute queries. To enable remote access for UDP, see *remote-admin udp-trace* command on page 4-55.

Syntax: `(config)# no remote-admin udp-trace`

Example: `(config)# no remote-admin udp-trace`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no remote-admin web

Use the **no remote-admin web** command to remove remote administration via Web-management. To enable remote access via the web, see *remote-admin web* command on page 4-56.

Syntax: `(config)# no remote-admin web {primary-port|primary-secure-port|secondary-port|secondary-secure-port}`

Field	Definition
primary-port	Primary HTTP port, default port 80
primary-secure-port	Primary HTTPS port, default port 443
secondary-port	Secondary HTTP port, default port 8080
secondary-secure-port	Secondary HTTPS port, default port 8443

Example: `(config)# no remote-admin web primary-port`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no router ospf

Use the **no router ospf** command to disable Router OSPF. See *Chapter 16, Configuration - OSPF Mode* for commands in this mode. To enter the OSPF configuration mode, see *router ospf* command on page 4-56.

CAUTION! A NO ROUTER OSPF COMMAND WILL DELETE ALL OF THE OSPF CONFIGURATION.

Syntax: `(config)# no router ospf`

Example: `(config)# no router ospf`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no security-log

Use the **no security-log** command to remove a security policy. To add a security policy, see *security-log* command on page 4-58.

Syntax: `(config)# no security-log` *setting*

Field		Definition
setting		
Accepted Events	**accepted-in-connects**	Disable incoming connections logging.
	accepted-out-connects	Disable outgoing connections logging.
Blocked Events	**block-conn-attempts**	Disable block connection attempts logging.
	blocked-fragments	Disable blocked fragments logging.
	defrag-error	Disable defragmentation errors logging.
	echo-chargen	Disable echo chargen logging.
	icmp-flood	Disable ICMP flood logging.
	icmp-multicast	Disable ICMP multicast logging.
	icmp-redirect	Disable ICMP redirects logging.
	icmp-replay	Disable ICMP replay logging.
	multicast-broadcast	Disable multicast broadcasts logging.
	pkt-illegal-opts	Disable packet illegal options logging.
	spoofed-connection	Disable spoofed connection logging.
	syn-flood	Disable syn flooding logging.
	udp-flood	Disable UDP flooding logging.
	winnuke	Disable winnuke configuration logging.
Other Events	**rem-admin-attempts**	Disable remote admin attempts logging.
	connection-states	Disable connection states logging.
Log Buffer	**prevent-log-overrun**	Disable log overrun prevention logging.

Example: `(config)# no security-log accepted-outgoing-connection`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no service

Use the **no service** command to disable named services. To enable services, see *service* command on page 4-59.

Syntax: `(config)# no service service-id`

Field	Definition
service-id	Enter the service number to apply the rule to. **Note:** The Service ID number is displayed with the *show service command, on page 3-61*

Example: `(config)# no service-id 16777220`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no snmp-server

Use the **no snmp-server** command to disable SNMP on the system. To enable SNMP, see *snmp-server* command on page 4-60.

Syntax: `(config)# no snmp-server`

Example: `(config)# no snmp-server`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no snmp-server traps

Use the **no snmp-server traps** command to disable SNMP traps on the system. To enable SNMP traps, see *snmp-server traps enable* command on page 4-61.

Syntax: `(config)# no snmp-server traps`

Example: `(config)# no snmp-server traps`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no static-dns

Use the **no static-dns** command to remove DNS Static entries. To add a DNS static entry, see *static-dns* command on page 4-62.

Syntax: **(config)# no static-dns hostname** *hostname* **ip-address** *address*

Field	Definition
hostname	Enter a DNS static host name of the server.
address	Enter the DNS static IP address.

Example: **(config)# no static-dns hostname server1 ip-address 192.168.100.100**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no time-range

Use the **no time-range** command to disable time range settings on the system. To set a time range, see *time-range* command on page 4-62.

Syntax: **(config)# no time-range** *schedule-name*

Field	Definition
schedule-name	Enter an existing schedule name to remove the time range restriction to.

Example: **(config)# no time-range SchedulerRule1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no username

Use the **no username** command to remove a user login from CLI. To add a username, see *username* command on page 4-63.

Syntax: **(config)# no username** *name*

Field	Definition
name	Enter an existing user name to remove.

Example: **(config)# no username johndoe**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no vlan

Use the **no vlan** command to clear all VLANs. To enter the VLAN configuration mode, see *vlan (global)* command on page 4-63.

Syntax: `(config)# no vlan`

Example: `(config)# no vlan`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no voice-codec

Use the **no voice-codec** command to remove a voice codec. To set the voice codecs, see *voice-codec* command on page 4-64.

Syntax: `(config)# no voice-codec {g711alaw|g711ulaw|g729}`

Field	Definition
g711alaw	**G.711, 64kbps, u-law**
g711ulaw	**G.711, 64kbps, A-law**
g729	**G.729, 8kbps**

Example: `(config)# no voice-codec g711alaw`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no voice-port trunk

Use the **no voice-port trunk** command to disable the Voice Port Trunk. To enter the Voice Port Trunk configuration mode, see *voice-port trunk* command on page 4-66.

Syntax: `(config)# no voice-port trunk` *port*

Field	Definition
port	Trunk port number. Value must be 1.

Example: `(config)# no voice-port trunk 1`

Supported Platforms: **Adit 3500, MSR**

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port-trigger service

Use the **port-trigger service** command to configure the port-triggering entries. To delete a port trigger service, see *no port-trigger-service* command on page 4-45.

Syntax: **(config)# port-trigger service** *name* **enable**

Field	Definition
name	Enter service name.

Example: **(config)# port-trigger service service2 enable**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

pptpc

Use the **pptpc** command to allow access to the VPN PPTP Client configuration commands. See *Chapter 17, Configuration - PPTPC Mode* for commands in this mode. To delete an existing connection, see *no pptpc* command on page 4-45

Syntax: **(config)# pptpc {pptpc** *connection-id*|**address** *address***}**

Field	Definition
connection-id	Enter the name of a connection. Range is 0-99.
address	Enter a destination IP address.

Example: **(config)# pptpc pptpc 1**

(config-pptpc-1)#

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

pptps

Use the **pptps** command to allow access to the VPN PPTP Server configuration commands. See *Chapter 18, Configuration - PPTPS Mode* for commands in this mode.To delete an existing connection, see *no pptpc* command on page 4-45.

Syntax: **(config)# pptps**

Example: **(config)# pptps**

(config-pptps)#

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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radius-client

Use the **radius-client** command to allow access to the RADIUS configuration commands. See *Chapter 19, Configuration - RADIUS Mode* for commands in this mode. For the no counterpart of this command, see *no radius-client* command on page 4-46.

Syntax: `(config)# radius-client`

Example: `(config)# radius-client`

`(config-radius)#`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

remote-admin

remote-admin icmp

Use the **remote-admin icmp** command to allow ICMP echo requests (pings). To deny ICMP echo requests, see *no remote-admin icmp* command on page 4-46.

CAUTION! **ALLOWING REMOTE ADMINISTRATION IS A SECURITY RISK.**

Syntax: `(config)# remote-admin icmp enable`

Example: `(config)# remote-admin icmp enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

remote-admin snmp

Use the **remote-admin snmp** command to allow SNMP control and diagnostic requests. To deny SNMP, see *no remote-admin snmp* command on page 4-46.

CAUTION! **ALLOWING REMOTE ADMINISTRATION IS A SECURITY RISK.**

Syntax: `(config)# remote-admin snmp enable`

Example: `(config)# remote-admin snmp enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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remote-admin telnet

Use the **remote-admin telnet** command to allow remote administration via Telnet. To deny telnet remote access, see *no remote-admin telnet* command on page 4-47.

CAUTION! **ALLOWING REMOTE ADMINISTRATION IS A SECURITY RISK.**

Syntax: `(config)# remote-admin telnet {primary-port|primary-secure-port|secondary-port} {port` *`port`*`|enable}`

Field	Definition
primary-port	Primary Telnet port, default port 23
primary-secure-port	Secure Telnet over SSL port, default port 992
secondary-port	Secondary Telnet port, default port 8023
port	Enter a specific port to change from default ports listed above.
enable	Enable port on telnet remote admin.

Example: `(config)# remote-admin telnet primary-port enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

remote-admin udp-trace

Use the **remote-admin udp-trace** command to allow UDP traceroute queries. To deny UDP traceroute queries, see *no remote-admin udp-trace* command on page 4-47.

CAUTION! **ALLOWING REMOTE ADMINISTRATION IS A SECURITY RISK.**

Syntax: `(config)# remote-admin udp-trace enable`

Example: `(config)# remote-admin udp-trace enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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remote-admin web

Use the **remote-admin web** command to allow remote administration via Web-management. To deny Web remote access, see *no remote-admin web* command on page 4-48.

CAUTION! **ALLOWING REMOTE ADMINISTRATION IS A SECURITY RISK.**

Syntax: `(config)# remote-admin web {primary-port|secondary-port|primary-secure-port|secondary-secure-port} [port] enable`

Field	Definition
primary-port	Primary HTTP port, default port 80
secondary-port	Secondary HTTP port, default port 8080
primary-secure-port	Primary HTTPS port, default port 443
secondary-secure-port	Secondary HTTPS port, default port 8443
port	Enter a specific port to change from default ports listed above.

Example: `(config)# remote-admin web primary-port enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

router ospf

Use the **router ospf** command to allow access to the Router OSPF global configuration commands. See *Chapter 16, Configuration - OSPF Mode* for commands in this mode. For the no counterpart of this command, see *no router ospf* command on page 4-48.

Syntax: `(config)# router ospf`

Example:
```
(config)# router ospf
(config-router-ospf)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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security-default

Use the **security-default** command to configure the security policy.

Syntax: `(config)# security-default {maximum|minimum|typical} [block-ip-frag]`

Field	Definition	
The following security levels are described in detail.		
	Requests Originating in the WAN	**Requests Originating in the LAN**
maximum	**Blocked**: No access to network from Internet, except as configured in the Local Servers, DMZ host and Remote Access screens.	**Limited**: Only commonly-used services, such as Web-browsing and e-mail, are permitted. These services include Telnet, FTP, HTTP, HTTPS, DNS, IMAP, POP3, Ping and SNMP
minimum	**Blocked**: No access to network from Internet, except as configured in the local Servers, DMZ host and Remote Access screens.	**Unrestricted**: All services are permitted, except as configured in the Access Control screen.
typical (default)	**Unrestricted**: Permits full access from Internet to network; all connection attempts permitted.	**Unrestricted**: All services are permitted, except as configured in the Access Control screen.
block-ip-frag	**Block IP Fragments** Checking this option will protect your network from a common type of hacker attack that could make use of fragmented data packets to sabotage your network. Note that VPN over IPSec and some UDP-based services make legitimate use of IP fragments. You will need to allow IP fragments to pass into the home network in order to make use of these selected services.	

Example: `(config)# security-default maximum`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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security-log

Use the **security-log** command to configure the security policy. To delete a security policy, see *no security-log* command on page 4-49.

Syntax: `(config)# security-log setting enable`

Field	Definition
Accepted Events	
accepted-in-connections	Sessions originated from the Internet that have been allowed by the firewall.
accepted-out-connections	Sessions originated from the network that have been allowed by the firewall.
Blocked Events	
blocked-conn-attempts	Sessions that have been blocked by the firewall.
blocked-fragments	Detection of fragmented packets when Block IP Fragments is enabled.
defrag-error	Detection of fragmented packets that cannot be properly reassembled.
echo-chargen	Detection of the Echo or Chargen DOS attacks.
icmp-flood	Detection of an ICMP flood DOS attack.
icmp-multicast	Detection of multicast ICMP packets, such as a ping to a subnet broadcast address.
icmp-redirect	Detection of improper ICMP redirect messages from the WAN.
icmp-replay	Detection of an ICMP Replay DOS attack.
multicast-broadcast	Detection of the Multicast or broadcast packets arriving at the WAN interface.
pkt-illegal-opts	Detection of IP packets with disallowed IP options: lsrr, ssrr, rr, timestamp, or error options.
spoofed-connection	Detection of IP address spoofing attacks.
syn-flood	Detection of the Syn Flood DOS attack.
udp-flood	Detection of a UDP Flood attack.
winnuke	Detection of the Winnuke DOS attack.
Other Events	
connection-states	Session connection state detail.
rem-admin-attempts	Management sessions established.
Log Buffer	
prevent-log-overrun	Stop logging firewall detail when the log is full. This prevents loosing early log entries, but will drop the later log entries.

Example: `(config)# security-log accepted-out-connection enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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service

Use the **service** command to create/modify User-Defined Services. To delete a service policy, see *no service* command on page 4-50.

Syntax: **(config)# service id {***service-id***|new} name** *service-name* **description** *text* **protocol {***protocol-number***|ah|esp|gre|icmp|tcp|udp} [server-src-port|open-src-port]**

Field	Definition	
service-id	Enter a User-Defined Service number to modify. User-Defined Service ID numbers can be displayed with the ***show config service command, on page 3-32***	
new	Will create a new User-Defined Service. **Note:** The system will assign an ID number. This number will be the next available ID number in sequence (starts with 4, **Note:** 0-3 are configured by default). **Do not use the *new* option when using an Automated Provisioning System.**	
service-name	Enter service name, which can also be found on the ***show config service command, on page 3-32***	
description *text*	Enter a one word description.	
protocol	Protocol to apply to this service. ***protocol-number*** - this option allows the user to enter a protocol number to use protocols that are not listed below. **ah** - Authentication Header Protocol. **esp** - Encapsulating Security Payload. **gre** - Generic Routing Encapsulation. **icmp** - Internet Control Message Protocol. **Note:** The range and a list of common settings are below. **type** - Range 0-255 **code** - Range 0-255 Echo Reply..... icmp type 0 code 0 Network Unreachable ..... icmp type 3 code 0 Host Unreachable..... icmp type 3 code 1 Protocol Unreachable..... icmp type 3 code 2 Port Unreachable..... icmp type 3 code 3 Destination Network Unknown ..... icmp type 3 code 6 Destination Host Unknown..... icmp type 3 code 7 Redirect for Network ..... icmp type 5 code 0 Redirect for Host..... icmp type 5 code 1 Echo Request ..... icmp type 8 code 0 **tcp** - Transmission Control Protocol. See source and destination port settings below. **udp** - User Datagram Protocol. See source and destination port settings below.	
open-src-port	Defines the open source/destination port. Syntax: **open-src-port {***port***|***port-port***|any} open-dst-port {***port***|***port-port***|any}**	
	open-src-port	**port** - Enter the open source port to apply the service to. **port-port** - Enter a range of ports to apply the service to. **any** - Apply to any port.
	open-dst-port	**port** - Enter the destination source port to apply the service to. **port-port** - Enter a range of ports to apply the service to. **any** - Apply to any port.

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server-src-port	Defines the server source/destination port. Syntax: **server-src-port {***port*|*port-port*|**any} server-dst-port {***port*|*port-port*|**any}**	
	server-src-port	**port** - Enter the server source port to apply the service to. **port-port** - Enter a range of ports to apply the service to. **any** - Apply to any port.
	server-dst-port	**port** - Enter the server destination port to apply the service to. **port-port** - Enter a range of ports to apply the service to. **any** - Apply to any port.

Example: `(config)# service id 5 name test description desc1 protocol gre`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

snmp-server

The following are the commands to set the SNMP server configuration. To disable SNMP, see *no snmp-server* command on page 4-50.

snmp-server community

Use the **snmp-server community** command to set the SNMP community name.

Syntax: `(config)# snmp-server community` *community-name* **{ro|rw}**

Field	Definition
community-name	Enter the SNMP Community Name.
ro	**Read only -** Set the community name to read only permission.
rw	**Read write -** Set the community name to read and write permission.

Example: `(config)# snmp-server community communitytestname ro`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

snmp-server enable

Use the **snmp-server enable** command to enable SNMP on the system.

Syntax: `(config)# snmp-server enable`

Example: `(config)# snmp-server enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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snmp-server host

Use the **snmp-server host** command to set a SNMP host.

Syntax: **(config)# snmp-server host** *address* **{community** *community-name*|**version {1|2c}**

Field	Definition
address	Enter an destination IP address.
community-name	Enter the SNMP community name.
version	**1** - SNMPv1 **2c** - SNMPv2c

Example: **(config)# snmp-server host 192.168.1.1 version 1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

snmp-server traps enable

Use the **snmp-server traps enable** command to enable SNMP traps on the system. To delete a SNMP server trap, see *no snmp-server traps* command on page 4-50.

Syntax: **(config)# snmp-server traps enable**

Example: **(config)# snmp-server traps enable**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

snmp-server trusted-ip

Use the **snmp-server trusted-ip** command to set a SNMP trusted peer (The IP address, or subnet address that identifies which remote management stations are allowed to perform SNMP operations).

Syntax: **(config)# snmp-server trusted-ip {***address***|any} [trusted-mask** *mask***]**

Field	Definition
address	Enter an IP address of a trusted peer.
any	Allow any IP address trusted peer access.
trusted-mask *mask*	This is an optional parameter, enter the subnet mask of the trusted peer IP address.

Example: **(config)# snmp-server trusted ip any**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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static-dns

Use the **static-dns** command to configure the DNS Static entries. To delete static DNS entries, see *no static-dns* command on page 4-51.

Syntax: **(config)# static-dns hostname** *hostname* **ip-address** *address*

Field	Definition
hostname	Enter a DNS static host name of the server.
address	Enter the DNS static IP address.

Example: **(config)# static-dns hostname server1 ip-address 192.168.100.100**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

time-range

Use the **time-range** command to define availability of the Ethernet port. To delete a time range, see *no time-range* command on page 4-51.

Syntax: **(config)# time-range id** *schedule-id* **name** *schedule-name*
{active|inactive} time-segment *time-segment-id*
{mon|tue|wed|thu|fri|sat|sun} time-range *hh:mm-hh:mm*

Field	Definition
schedule-id	Enter a schedule ID for the scheduler rule.
schedule-name	Enter a name for the scheduler rule.
active	Sets this time range to be active during the set time.
inactive	Sets this time range to be inactive during the set time.
time-segment-id	Enter time-range ID to apply. Range 0 - 9999
mon|tue|wed|thu|fri|sat|sun	Select the days of the week the interface for the rule.
hh:mm-hh:mm	Set the range of time, start time-end time. ***hh*** = hours, range 00 - 23 ***mm*** = minutes, range 00 - 59

Example: **(config)# time-range id 1 name test1 active time-segment 2 mon 08:00-18:00**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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username

Use the **username** command to create/modify a user profile for CLI. To delete a username, see *no username* command on page 4-51.

Syntax: **(config)# username** *name* **password** *password* **{admin|monitor |operator}**

Field	Definition
name	Enter a User name, with a maximum of 15 characters.
password	Password for the user, with a maximum of 15 characters. This is an optional parameter. Default is "password".
admin	Read/write privileges, including user access management.
monitor	Read only privileges. Default is monitor.
operator	Read/write privileges, excluding user access management.

Example: **(config)# username johndoe password mypassword operator**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

vlan (global)

Use the **vlan** command to allow access to the global VLAN configuration commands. See *Chapter 20, Configuration - VLAN Mode* for commands in this mode. To clear VLANs, see the *no vlan* command on page 4-52.

Syntax: **(config)# vlan**

Example:
```
(config)# vlan
(config-vlan)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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vlan (vlan-id)

Use the **vlan** command to allow access to the VLAN port configuration commands. See *Chapter 21, Configuration - VLAN Port Mode* for commands in this mode.

Syntax: `(config)# vlan v-id`

Field	Definition
v-id	VLAN identifier. Range 2-4096.

Example:
```
(config)# vlan 100
(config-vlan-100)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

voice-codec

Use the **voice-codec** command to select which codecs are to be enabled and allows the user to set the Packetization Time for that codec. To disable a codec, see *no voice-codec* command on page 4-52.

Syntax: `(config)# voice-codec {g711alaw|g711ulaw|g729} ptime {10|20|30|40|50|60|70|80}`

Field	Definition
g711alaw	**G.711, 64kbps, A-law**
g711ulaw	**G.711, 64kbps, μ-law**
g729	**G.729, 8kbps**
ptime	Set the Packetization Time for the codec. Default for all is 20. Packetization Time for each codec is as follows: **G.711A-Law** = 10, 20, 30, 40, 50 or 60 **G.711μ-Law** = 10, 20, 30, 40, 50 or 60 **G.729** = 10, 20, 30, 40, 50, 60, 70 or 80

Example:
```
(config)# voice-codec g711alaw ptime 30
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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voice-port (global)

Use the **voice-port fxs** command to allow access to the Voice Port (global) configuration commands. See *Chapter 22, Configuration - Voice Port Mode* for commands in this mode.

Syntax: `(config)# voice-port`

Example:
```
(config)# voice-port
(config-vport)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

voice-port fxs

Use the **voice-port fxs** command to allow access to the Voice Port FXS configuration commands. See *Chapter 23, Configuration - Voice Port FXS Mode* for commands in this mode.

Syntax: `(config)# voice-port fxs` *port*

Field	Definition
port	FXS voice port number. **Adit 3104:** Range = 1-8. **Adit 3500:** Range = 1-4. **MSR:** Range = 1-48.

Example:
```
(config)# voice-port fxs 1
(config-vport-fxs-1)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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voice-port trunk

Use the **voice-port trunk** command to allow access to the Voice Port Trunk configuration commands. See *Chapter 24, Configuration - Voice Port Trunk Mode* for commands in this mode. To remove access to a Voice Port Trunk, see *no voice-port trunk* command on page 4-52.

Syntax: `(config)# voice-port trunk` *port*

Field	Definition
port	FXS voice port trunk number. Value must be 1.

Example:
```
(config)# voice-port trunk 1
(config-vport-trk-1)#
```

Supported Platforms: **Adit 3500, MSR**

voice-service sip

Use the **voice-service sip** command to allow access to the Voice Service SIP configuration commands. See *Chapter 25, Configuration - Voice Service SIP Mode* for commands in this mode.

Syntax: `(config)# voice-service sip`

Example:
```
(config)# voice-service sip
(config-serv-sip)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 5

Configuration - LCC Controller Mode

The LCC (Link Cross-Connect) Controller Configuration commands allow the user to configure the Link Cross-Connect parameters for the MSR card.

Note: The LCC Controller Configuration mode is supported by the MSR card only. For Controller Configuration commands for the Adit 3000 series, see *Chapter 6, Configuration - T1 Controller Mode*.

This sub-group is entered with the **(config)# controller lcc** command from the Configuration mode.

The LCC Controller commands are represented by the **(config-cont-lcc-{*n*})#** prompt.

LCC Controller Commands

- ***description***
- ***do***
- ***end***
- ***exit***
- ***history***
- ***no command***
- ***shutdown***

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description

Use the Controller LCC **description** command to enter a description for the LCC.

Syntax: **(config-cont-lcc-{*n*})# description** *text*

Field	Definition
text	Enter a description for the LCC.

Example: **(config-cont-lcc-1)# description LCC#1**

Supported Platforms: **MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-cont-lcc-{n})# end`

Example:
```
(config-cont-lcc-1)# end
#
```

Supported Platforms: **MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-cont-lcc-{n})# exit`

Example:
```
(config-cont-lcc-1)# exit
(config)#
```

Supported Platforms: **MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-cont-lcc-{n})# history`

Example: `(config-cont-lcc-1)# history`

```
history
description Test-LCC
no shutdown
history
```

Supported Platforms: **MSR**

no command

no shutdown

Use the Controller LCC **no shutdown** command to set the LCC up (in-service). To set the LCC down (Out-of-Service), see the *shutdown* command on page 5-6.

Syntax: `(config-cont-lcc-{n})# no shutdown`

Example: `(config-cont-lcc-1)# no shutdown`

Supported Platforms: **MSR**

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shutdown

Use the Controller LCC **shutdown** command to set the LCC interface down (out-of-service). To set the LCC up (in-service), see the *no shutdown* command on page 5-5.

Syntax: `(config-cont-lcc-{n})# shutdown`

Example: `(config-cont-lcc-1)# shutdown`

Supported Platforms: **MSR**

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CHAPTER 6

Configuration - T1 Controller Mode

The T1 Controller Configuration commands allow the user to configure the T1 parameters on the Adit 3000 series.

Note: The T1 Controller Configuration mode is supported by the Adit 3000 series only. For Controller Configuration commands for the MSR card, see *Chapter 5, Configuration - LCC Controller Mode*.

This sub-group is entered with the **(config)# controller t1** command from the Configuration mode.

The T1 Controller commands are represented by the **(config-cont-t1-{*n*})#** prompt.

T1 Controller Commands

- ***description***
- ***do***
- ***ds0-group***
- ***end***
- ***exit***
- ***fdl***
- ***framing***
- ***history***
- ***idle-pattern***
- ***lbo***
- ***linecode***
- ***loopback***
- ***loopdetect***
- ***no commands***
- ***pri-group***
- ***shutdown***
- ***tdm-group***
- ***threshold***

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description

Use the Controller T1 **description** command to set the circuit ID of the T1.

Syntax: **`(config-cont-t1-{`***`n`***`})# description`** *`text`*

Field	Definition
text	Enter a description for the Controller T1.

Example: **`(config-cont-t1-1)# description T1#1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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ds0-group

Use the Controller T1 **ds0-group** command to create a group of T1s. To delete a DS0 group, see *no ds0-group* command on page 6-9.

Syntax: `(config-cont-t1-{n})# ds0-group timeslots range`

Field	Definition
range	DS0 timeslot range, in the format *n-n (1-4)*. Range is 1 - 24.

Example: `(config-cont-t1-1)# ds0-group timeslots 1-4`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-cont-t1-{n})# end`

Example:
```
(config-cont-t1-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-cont-t1-{n})# exit`

Example:
```
(config-cont-t1-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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fdl

Use the Controller T1 **fdl** command to set line Facilities Data Link (FDL) capabilities the T1 interface.

Syntax: `(config-cont-t1-{n})# fdl {none|t1.403}`

Field	Definition
none	Disable FDL output messages. Default.
t1.403	Enable T1.403 FDL performance messages.

Example: `(config-cont-t1-1)# fdl none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

framing

Use the Controller T1 **framing** command to set the framing option for the designated T1.

Syntax: `(config-cont-t1-{n})# framing {d4|esf}`

Field	Definition
d4	D4 Superframe (SF)
esf	Extended Superframe. Default.

Example: `(config-cont-t1-1)# framing d4`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-cont-t1-{n})# history`

Example: `(config-cont-t1-1)# history`

```
history
framing d4
threshold daily lcv
threshold d
threshold daily pcv
threshold daily bes
threshold daily css
threshold daily uas 1000
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

idle-pattern

Use the Controller T1 **idle-pattern** command to set the idle pattern on the designated T1.

Syntax: `(config-cont-t1-{n})# idle-pattern` *number*

Field	Definition
number	A hexadecimal number with a range from 0x00 to 0xff. This number must be preceeded by 0x. Default 0x7f.

Example: `(config-cont-t1-1)# idle-pattern 0x7f`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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lbo

lbo long

Use the Controller T1 **lbo long** command to set Line Build Out on the T1.

Syntax: `(config-cont-t1-{n})# lbo long {-7.5db|-15db|-22.5db}`

Field	Definition
-7.5db	CSU attenuation for LBO of 7.5dB
-15db	CSU attenuation for LBO of 15dB
-22.5db	CSU attenuation for LBO of 22.5dB

Example: `(config-cont-t1-1)# lbo long -15db`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

lbo short

Use the Controller T1 **lbo short** command to set Line Build Out on the T1.

Syntax: `(config-cont-t1-{n})# lbo short {133|266|399|533|655}`

Field	Definition
133	DSX-1 equalization for 0-133 ft. Default.
266	DSX-1 equalization for 133-266 ft.
399	DSX-1 equalization for 266-399 ft.
533	DSX-1 equalization for 399-533 ft.
655	DSX-1 equalization for 533-655 ft.

Example: `(config-cont-t1-1)# lbo short 266`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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linecode

Use the Controller T1 **linecode** command to set the line coding for the designated T1.

Syntax: `(config-cont-t1-{n})# linecode {ami|b8zs}`

Field	Definition
ami	Alternate Mark Inversion line coding (AMI).
b8zs	Binary 8 Zero Substitution line coding (B8ZS). Default.

Example: `(config-cont-t1-1)# linecode ami`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

loopback

Use the Controller T1 **loopback** command enables a loopback on the T1.

Syntax: `(config-cont-t1-{n})# loopback {line|none|payload}`

Field	Definition
line	Line loopback enabled.
none	Loopback disabled. Default.
payload	Payload loopback enabled.

Example: `(config-cont-t1-1)# loopback line`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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loopdetect

Use the Controller T1 **loopdetect** command to enable the detection of CSU or NIU loop code.

Syntax: `(config-cont-t1-{n})# loopdetect {csu|niu|none}`

Field	Definition
csu	Enable detection of CSU loop codes (10000 for loop up, 100 for loop down)
niu	Enable detection of NIU loop codes
none	Disable detection. Default.

Example: `(config-cont-t1-1)# loopdetect csu`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

no commands

no ds0-group

Use the Controller T1 **no ds0-group** command to ungroup DS0 timeslots. To group DS0s, see *ds0-group* command on page 6-4.

Syntax: `(config-cont-t1-{n})# no ds0-group`

Example: `(config-cont-t1-1)# no ds0-group`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

no pri-group

Use the Controller T1 **no pri-group** command to ungroup PRI timeslots. To group PRI timeslots, see *pri-group* command on page 6-10.

Syntax: `(config-cont-t1-{n})# no pri-group timeslots range`

Field	Definition
range	PRI timeslot range, in the format *n-n (1-4)*. Range is 1 - 23.

Example: `(config-cont-t1-1)# no pri-group timeslots 1-4`

Supported Platforms: **Adit 3104, Adit 3500**

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no shutdown

Use the Controller T1 **no shutdown** command to set the T1 up (In-Service). To set the T1 down (Out-of-Service), see *shutdown* command on page 6-11.

Syntax: `(config-cont-t1-{n})# no shutdown`

Example: `(config-cont-t1-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

no tdm-group

Use the Controller T1 **no tdm-group** command to ungroup TDM timeslots. To group TDM timeslots, see *tdm-group* command on page 6-11.

Syntax: `(config-cont-t1-{n})# no tdm-group timeslots range`

Field	Definition
range	TDM timeslot range, in the format *n-n (1-4)*. Range is 1 - 24.

Example: `(config-cont-t1-1)# no tdm-group timeslots 1-4 dir`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

pri-group

Use the Controller T1 **pri-group** command to group PRI timeslots. To delete a PRI group, see *no pri-group* command on page 6-9.

Syntax: `(config-cont-t1-{n})# pri-group timeslots range dir {in|in-out|out}`

Field	Definition
range	PRI timeslot range, in the format *n-n (1-4)*. Range is 1 - 23.
in	Defines the direction as incoming only.
in-out	Defines the direction as both incoming and outgoing.
out	Defines the direction as outgoing only.

Example: `(config-cont-t1-1)# pri-group timeslots 1-4`

Supported Platforms: **Adit 3104, Adit 3500**

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shutdown

Use the Controller T1 **shutdown** command to set the T1 interface down (out-of-service). To set the T1 up (in-service) see *no shutdown* command on page 6-10.

Syntax: `(config-cont-t1-{n})# shutdown`

Example: `(config-cont-t1-1)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

tdm-group

Use the Controller T1 **tdm-group** command to create a group and define its direction. To delete a TDM group, see *no tdm-group* command on page 6-10.

Syntax: `(config-cont-t1-{n})# tdm-group timeslots range dir {in|in-out|out}`

Field	Definition
range	TDM timeslot range, in the format *n-n (1-4)*. Range is 1 - 24.
in	Defines the direction as incoming only.
in-out	Defines the direction as both incoming and outgoing.
out	Defines the direction as outgoing only.

Example: `(config-cont-t1-1)# tdm-group timeslots 1-4 dir in-out`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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threshold

Use the Controller T1 **threshold** command to define the interval and threshold levels for this T1.

Syntax: `(config-cont-t1-{n})# threshold {daily|min15} {bes|css|dm|es|lcv|les|pcv|sefs|ses|uas} {value}`

Threshold Settings	Minute 15	Daily
BES - Bursty Errored Seconds Defect Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
CSS - Controller Slip Seconds Defect Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
DM - Degraded Minutes Threshold	Default is 0. Range is 0 - 15	Default is 0. Range is 0 - 1440
ES - Errored Seconds Defect Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
LCV - Line Code Violations Defect Threshold	Default is 0. Range is 0 - 1389600	Default is 0. Range is 0 - 133401600
LES - Line Errored Seconds Defect Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
PCV - Path Code Violation Defect Threshold	Default is 0. Range is 0 - 1389600	Default is 0. Range is 0 - 133401600
SEFS - Severely Errored Frame Seconds Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
SES - Severely Errored Seconds Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400
UAS - Unavailable Seconds Defect Threshold	Default is 0. Range is 0 - 900	Default is 0. Range is 0 - 86400

Example: `(config-cont-t1-1)# threshold 15min les 1200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

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CHAPTER 7

Configuration - DHCP Pool Ethernet Mode

The DHCP Pool Configuration commands allow the user to configure the DHCP parameters for each interface.

This sub-group is entered with the **(config)# ip dhcp pool ethernet** command from the Configuration mode.

The DHCP Pool commands are represented by the **(config-dhcp-eth-{n})#** prompt.

DHCP Pool Commands

- ***do***
- ***end***
- ***end-address***
- ***exit***
- ***history***
- ***lease***
- ***no commands***
- ***option***
- ***relay***
- ***start-address***
- ***static-lease***
- ***subnet-mask***
- ***wins server***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-dhcp-eth-{n})# end`

Example:
```
(config-dhcp-eth-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end-address

Use the DHCP **end-address** command to define the DHCP end address. This command works with the **start-address** (start IP address) to define the number of IP addresses in the DHCP pool. This also limits the number of hosts that may be connected to the network in this subnet. End-address defines the last IP address that may be assigned in this subnet.

Syntax: `(config-dhcp-eth-{n})# end-address` *address*

Field	Definition
address	The ending address of the client address pool, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255

Example:
```
(config-dhcp-eth-1)# end-address 192.168.1.255
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-dhcp-eth-{n})# exit`

Example:
```
(config-dhcp-eth-1)# exit
```

Example:
```
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session.

NOTE: This command can be entered in any configuration mode.

Syntax: `(config-dhcp-eth-{n})# history`

Example:

```
(config-dhcp-eth-1)# history

end-address 192.168.1.250
lease 900
relay 192.168.1.120
start-address 192.168.1.1
subnet-mask 255.255.255.0
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

lease

Use the DHCP **lease** command to define the DHCP lease time, in minutes. This defines the lease duration, or the length of time for which the IP address can be used before a lease renewal is required, or if the address is no longer in use, it is automatically returned to the pool for reallocation.

Syntax: `(config-dhcp-eth-{n})# lease time`

Field	Definition
time	Enter the DHCP lease time. Range is 1 - 71582788 minutes, with a default of 60.

Example:

```
(config-dhcp-eth-1)# lease 120
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no option

Use the DHCP Pool **no option** command to delete a DHCP option. To add a DHCP pool, see *option* command on page 7-6.

Syntax: `(config-dhcp-eth-{n})# no option {66|67}`

Field	Definition
66	Remove/Disable option 66 (TFTP server name).
67	Remove/Disable option 67 (Boot file name).

Example: `(config-dhcp-eth-1)# no option 66`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no relay

Use the DHCP Pool **no relay** command to disable DHCP relay. To enable relay, see *relay* command on page 7-6.

Syntax: `(config-dhcp-eth-{n})# no relay`

Example: `(config-dhcp-eth-1)# no relay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no static-lease

Use the DHCP Pool **no static-lease** command to remove a static DHCP lease. To add a static lease, see *static-lease* command on page 7-7.

Syntax: `(config-dhcp-eth-{n})# no static-lease ip-address address`

Field	Definition
address	Enter the IP address of the static lease to remove.

Example: `(config-dhcp-eth-1)# no static-lease ip-address 10.10.2.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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option

Use the **option** command to configure DHCP options per RFC 2132. To delete an option, see *no option* command on page 7-5.

Syntax: `(config-dhcp-eth-{n})# option {66 {enable|value {address|hostname}|67 {enable|value filename}`

Field	Definition
66	**66** - Send the TFTP server name. ***address*** - Enter the IP address of the TFTP server. ***hostname*** - Enter the host name of the TFTP server.
67	**67** - Send the Boot file name. ***filename*** - Enter the boot file name.
enable	To enable the DHCP option.

Example: `(config-dhcp-eth-1)# option value 66 10.10.5.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

relay

Use the DHCP Pool **relay** command to configure DHCP relay. The DHCP relay is responsible for forwarding the requests and responses negotiating between the DHCP clients and the server. To delete DHCP relay, see *no relay* command on page 7-5.

Syntax: `(config-dhcp-eth-{n})# relay address1 [address2] [address3] ...`

Field	Definition
address	The DHCP relay IP address, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255
address1, address 2, ...	Optional address parameter, to enter additional DHCP relay IP addresses, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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start-address

Use the DHCP Pool **start-address** command to define the DHCP start IP address. This command works with the **end-address** (end IP address) to define the number of IP addresses in the DHCP pool. This also limits the number of hosts that may be connected to the network in this subnet. Start defines the first IP address that may be assigned in this subnet.

Syntax: **(config-dhcp-eth-{*n*})# start-address** *address*

Field	Definition
address	The starting address of the client address pool, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255

Example: **(config-dhcp-eth-1)# start-address 192.168.1.1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

static-lease

Use the DHCP Pool **static-lease** command to add a static DHCP lease. To delete a lease, see *no static-lease* command on page 7-5.

Syntax: **(config-dhcp-eth-{*n*})# static-lease ip-address** *address* **hostname** *hostname*

Field	Definition
address	The starting address of the client address pool, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255
hostname	Set the static lease host name

Example: **(config-dhcp-eth-1)# static-lease ip-address 192.168.1.100 hostname www.turinnetworks.com**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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subnet-mask

Use the DHCP Pool **subnet-mask** command to define the subnet mask for the DHCP pool.

Syntax: **(config-dhcp-eth-{*n*})# subnet-mask** *mask*

Field	Definition
mask	Enter the DHCP pool subnet mask, using the form xxx.xxx.xxx.xxx, where xxx is a number from 0 to 255. This is an optional setting.

Example: **(config-dhcp-eth-1)# subnet-mask 255.255.255.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

wins server

Use the DHCP Pool **wins sever** command to set the WINS server IP address of the client address pool.

Syntax: **(config-dhcp-eth-{*n*})# wins server** *address*

Field	Definition
address	The WINS server IP address of the client address pool, in the form of xxx.xxx.xxx.xxx, where xxx is between 0-255

Example: **(config-dhcp-eth-1)# wins server 192.168.3.1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 8

Configuration - Dial Peer FXS Mode

The Dial Peer FXS Configuration commands allow the user to configure the Dial Peer FXS parameters.

Enter this sub-group with the **(config)# dial-peer voice pots fxs** *port* command from the Configuration mode.

The Dial Peer FXS commands are represented by the **(config-dpeer-fxs)#** prompt.

Dial Peer FXS Commands

- ***block-out-caller-id***
- ***call-wait-caller-id***
- ***call-waiting***
- ***calling-party-disc***
- ***codec preference***
- ***destination-pattern***
- ***do***
- ***end***
- ***exit***
- ***fax-protocol***
- ***history***
- ***modem-protocol***
- ***no commands***
- ***sip-authentication***

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block-out-caller-id

Use the Dial Peer **block-out-caller-id** command to enable the blocking of outgoing Caller ID. To disable blocking, see *no block-out-caller-id* command on page 8-8.

Syntax: `(config-dpeer-fxs)# block-out-caller-id enable`

Example: `(config-dpeer-fxs)# block-out-caller-id enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

call-wait-caller-id

Use the Dial Peer **call-wait-caller-id** command to enable Call Waiting and Caller ID. To disable these calling features, see *no call-wait-caller-id* command on page 8-8.

Syntax: `(config-dpeer-fxs)# call-wait-caller-id enable`

Example: `(config-dpeer-fxs)# call-wait-caller-id enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

call-waiting

Use the Dial Peer **call-waiting** command to enable Call Waiting. To disable Call Waiting, see *no call-waiting* command on page 8-8.

Syntax: `(config-dpeer-fxs)# call-waiting enable`

Example: `(config-dpeer-fxs)# call-waiting enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

calling-party-disc

Use the Dial Peer **calling-party-disc** command to enable Calling Party Disconnect. To disable this feature, see *no calling-party-disc* command on page 8-8.

Syntax: `(config-dpeer-fxs)# calling-party-disc enable`

Example: `(config-dpeer-fxs)# calling-party-disc enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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codec preference

Use the Dial Peer **codec preference** command to set the codec preferences used to establish the codec list offered during media negotiation. To delete a codec, see *no codec preference* command on page 8-9.

Syntax: `(config-dpeer-fxs)# codec preference {1|2|3} {g711alaw|g711ulaw|g729}`

Field	Definition
1|2|3	Enter the preference number. #1 being the first preference.
g711alaw	Set the codec preference to G.711 A-law.
g711ulaw	Set the codec preference to G.711 U-law.
g729	Set the codec preference to G.729. **Note:** This codec is not supported by the Adit 3500 or MSR for FXS.

Example: `(config-dpeer-fxs)# codec preference 1 g711alaw`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

destination-pattern

Use the Dial Peer **destination-pattern** command to define the full telephone number to be used for a dial peer.

Syntax: `(config-dpeer-fxs)# destination-pattern` *number*

Field	Definition
number	Enter the phone number to be used for a dial peer.

Example: `(config-dpeer-fxs)# destination-pattern 5551212`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file.

Syntax: `(config-dpeer-fxs}# end`

Example:
```
(config-dpeer-fxs)# end
#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-dpeer-fxs} {n})# exit`

Example:
```
(config-dpeer-fxs)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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fax-protocol

Use the Dial Peer **fax-protocol** command to configure the fax protocol.

Syntax: `(config-dpeer-fxs)# fax-protocol {none|pass-through|t38}`

Field	Definition
none	A Fax call would be treated as a normal voice call. Default.
pass-through	Will cause the line to transmit in G.711 mode, with echo cancellation and silence suppression disabled, on detection of Fax tone.
t38	Upon detection of a Fax tone on the port, will cause the gateway to negotiate a T.38 session with its peer and if successful, will enter T.38 Fax-relay mode. Will dynamically consume a T.38 token for the session. **Note:** For the MSR, T.38 will be supported in a future release.

Example: `(config-dpeer-fxs)# fax-protocol none`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-dpeer-fxs)# history`

Example: `(config-dpeer-fxs)# history`

```
history
block-out-caller-id enable
call-wait-caller-id enable
call-waiting enable
calling-party-disc enable
codec preference 1 g729
history
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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modem-protocol

Use the Dial Peer **modem-protocol** command to configure the modem protocol.

Syntax: `(config-dpeer-fxs)# modem-protocol {none|pass-through}`

Field	Definition
none	A Modem call would be treated as a normal voice call. Default.
pass-through	Will cause the line to transmit in G.711 mode, with echo cancellation and silence suppression disabled, on detection of Modem tone.

Example: `(config-dpeer-fxs)# modem-protocol pass-though`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no commands

no block-out-caller-id

Use the Dial Peer **no block-out-caller-id** command to disable the Caller ID blocking. To enable blocking, see *block-out-caller-id* command on page 8-2.

Syntax: `(config-dpeer-fxs)# no block-out-caller-id`

Example: `(config-dpeer-fxs)# no block-out-caller-id`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no call-wait-caller-id

Use the Dial Peer **no call-wait-caller-id** command to disable Call Waiting Caller ID. To enable these calling features, see *call-wait-caller-id* command on page 8-2.

Syntax: `(config-dpeer-fxs)# no call-wait-caller-id`

Example: `(config-dpeer-fxs)# no call-wait-caller-id`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no call-waiting

Use the Dial Peer **no call-waiting** command to disable Call Waiting. To enable Call Waiting, see *call-waiting* command on page 8-2.

Syntax: `(config-dpeer-fxs)# no call-waiting`

Example: `(config-dpeer-fxs)# no call-waiting`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no calling-party-disc

Use the Dial Peer **no calling-party-disc** command to disable Calling Party Disconnect. To enable this feature, see *calling-party-disc* command on page 8-2.

Syntax: `(config-dpeer-fxs)# no calling-party-disc`

Example: `(config-dpeer-fxs)# no calling-party-disc`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no codec preference

Use the Dial Peer **no codec preference** command to remove a codec preference. To set the codec preferences, see *codec preference* command on page 8-3.

Syntax: `(config-dpeer-fxs)# no codec preference {1|2|3}`

Field	Definition
1|2|3	Remove a specific codec preference. Range 1 - 3

Example: `(config-dpeer-fxs)# no codec preference 1`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no sip-authentication

Use the Dial Peer **no sip-authentication** command to disable SIP authentication. To enable SIP authentication, see *sip-authentication* command on page 8-10.

Syntax: `(config-dpeer-fxs)# no sip-authentication`

Example: `(config-dpeer-fxs)# no sip-authentication`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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sip-authentication

Note: To disable this SIP authentication, see the *no sip-authentication* command on page 8-9.

sip-authentication enable

Use the Dial Peer **sip-authentication enable** command to enable SIP.

Syntax: `(config-dpeer-fxs)# sip-authentication enable`

Example: `(config-dpeer-fxs)# sip-authentication enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

sip-authentication password

Use the Dial Peer **sip-authentication password** command to set the SIP password.

Syntax: `(config-dpeer-fxs)# sip-authentication password` *password*

Field	Definition
password	The password to be used when responding to authentication requests.

Example:
```
(config-dpeer-fxs)# sip-authentication password
test-password
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

sip-authentication username

Use the Dial Peer **sip-authentication username** command to set the SIP ID.

Syntax: `(config-dpeer-fxs)# sip-authentication username` *username*

Field	Definition
username	The User ID to be used when responding to authentication requests. Default is the User ID of the line.

Example:
```
(config-dpeer-fxs)# sip-authentication username
test-user-1
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 9

Configuration - Dial Peer Trunk Mode

The Dial Peer Trunk Configuration commands allow the user to configure the Dial Peer Trunk parameters.

Enter this sub-group with the **(config)# dial-peer voice pots trunk** *trunk dest-port* command from the Configuration mode.

The Dial Peer Trunk commands are represented by the **(config-dpeer-trk)#** prompt.

Note: The Dial Peer Trunk option is not supported on the Adit 3104.

Dial Peer Trunk Commands

- ***codec preference***
- ***destination-pattern***
- ***do***
- ***end***
- ***exit***
- ***fax-protocol***
- ***history***
- ***modem-protocol***
- ***no commands***
- ***prefix***
- ***sip-authentication***
- ***strip-digits***

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codec preference

Use the Dial Peer **codec preference** command to set the codec preferences used to establish the codec list offered during media negotiation. To delete a preference, see *no codec preference* command on page 9-6.

Syntax: `(config-dpeer-trk)# codec preference {1|2|3} {g711alaw|g711ulaw|g729}`

Field	Definition
1|2|3	Enter the preference number. #1 being the first preference.
g711alaw	Set the codec preference to G.711 A-law.
g711ulaw	Set the codec preference to G.711 U-law.
g729	Set the codec preference to G.729.

Example: `(config-dpeer-trk)# codec preference 1 g711alaw`

Supported Platforms: **Adit 3500, MSR**

destination-pattern

Use the Dial Peer **destination-pattern** command to assign dial patterns to the trunk. To delete a pattern, see *no destination-pattern* command on page 9-6.

Syntax: `(config-dpeer-trk)# destination-pattern` *dest-pattern*

Field	Definition
dest-pattern	Enter the phone number pattern that must be matched for calls to be routed to the trunk. Use **?** as a wildcard that can be replaced with any single digit. Use **$** as a wildcard that can be replaced with multiple digits (all digits following the $ are ignored).

Example: `(config-dpeer-trk)# destination-pattern 555$`

Supported Platforms: **Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file.

Syntax: `(config-dpeer-trk)# end`

Example:
```
(config-dpeer-trk)# end
#
```

Supported Platforms: **Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-dpeer-trk)# exit`

Example:
```
(config-dpeer-trk)# exit
(config)#
```

Supported Platforms: **Adit 3500, MSR**

fax-protocol

Use the Dial Peer **fax-protocol** command to configure the fax protocol.

Syntax: `(config-dpeer-trk)# fax-protocol {none|pass-through|t38}`

Field	Definition
none	A Fax call would be treated as a normal voice call. Default.
pass-through	Will cause the line to transmit in G.711 mode, with echo cancellation and silence suppression disabled, on detection of Fax tone.
t38	Upon detection of a Fax tone on the port, will cause the gateway to negotiate a T.38 session with its peer and if successful, will enter T.38 Fax-relay mode. Will dynamically consume a T.38 token for the session. **Note:** For the MSR, T.38 will be supported in a future release.

Example: `(config-dpeer-trk)# fax-protocol none`

Supported Platforms: **Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-dpeer-trk)# history`

Example: `(config-dpeer-trk)# history`

```
destination-pattern
fax-protocol none
modem-protocol pass-through
sip-authentication enable
strip-digits
history
```

Supported Platforms: **Adit 3500, MSR**

modem-protocol

Use the Dial Peer **modem-protocol** command to configure the modem protocol.

Syntax: `(config-dpeer-trk)# modem-protocol {none|pass-through}`

Field	Definition
none	A Modem call would be treated as a normal voice call. Default.
pass-through	Will cause the line to transmit in G.711 mode, with echo cancellation and silence suppression disabled, on detection of Modem tone.

Example: `(config-dpeer-trk)# modem-protocol pass-though`

Supported Platforms: **Adit 3500, MSR**

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no commands

no codec preference

Use the Dial Peer **no codec preference** command to remove a codec preference. To set the preferences, see *codec preference* command on page 9-2.

Syntax: `(config-dpeer-trk)# no codec preference {1|2|3}`

Field	Definition
1|2|3	Set the preference level. Range 1 - 3.

Example: `(config-dpeer-trk)# no codec preference 1`

Supported Platforms: **Adit 3500, MSR**

no destination-pattern

Use the Dial Peer **no destination-pattern** command to remove a destination pattern. To set the destination pattern, see *destination-pattern* command on page 9-2.

Syntax: `(config-dpeer-trk)# no destination-pattern`

Example: `(config-dpeer-trk)# no destination-pattern`

Supported Platforms: **Adit 3500, MSR**

no sip-authentication

Use the Dial Peer **no sip-authentication** command to disable SIP authentication. To configure SIP authentication, see *sip-authentication* command on page 9-7.

Syntax: `(config-dpeer-trk)# no sip-authentication`

Example: `(config-dpeer-trk)# no sip-authentication`

Supported Platforms: **Adit 3500, MSR**

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prefix

Use the Dial Peer **prefix** command to define the prefix of the phone number.

Syntax: **`(config-dpeer-trk)# prefix`** *`prefix`*

Field	Definition
prefix	Prefix is the digits or a name to be added to the phone number after the stripping process has been applied. Up to 10 digits may be entered.

Example: **`(config-dpeer-trk)# prefix 1303`**

Supported Platforms: **Adit 3500, MSR**

sip-authentication

Note: To delete SIP authentication, see *no sip-authentication* command on page 9-6.

sip-authentication enable

Use the Dial Peer **sip-authentication enable** command to enable SIP.

Syntax: **`(config-dpeer-trk)# sip-authentication enable`**

Example: **`(config-dpeer-trk)# sip-authentication enable`**

Supported Platforms: **Adit 3500, MSR**

sip-authentication password

Use the Dial Peer **sip-authentication password** command to set the SIP password.

Syntax: **`(config-dpeer-trk)# sip-authentication password`** *`password`*

Field	Definition
password	The password to be used when responding to authentication requests.

Example: **`(config-dpeer-trk)# sip-authentication password test-password`**

Supported Platforms: **Adit 3500, MSR**

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sip-authentication username

Use the Dial Peer **sip-authentication username** command to set the SIP ID.

Syntax: `(config-dpeer-trk)# sip-authentication username` *username*

Field	Definition
username	The User ID to be used when responding to authentication requests. Default is the User ID of the line.

Example:
```
(config-dpeer-trk)# sip-authentication username
test-user-1
```

Supported Platforms: **Adit 3500, MSR**

strip-digits

Use the Dial Peer **strip-digits** command to configure the number of digits (or characters) to be stripped off from the left most digits in the phone number. Possible usages include stripping off the area code, or the 3-digit office prefix.

Syntax: `(config-dpeer-trk)# strip-digits` *number*

Field	Definition
number	Range is based on the defined phone number. Default is set to 0.

Example:
```
(config-dpeer-trk)# strip-digits 4
```

Supported Platforms: **Adit 3500, MSR**

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CHAPTER 10

Configuration - Dial Peer VoIP Mode

The Dial Peer VoIP Configuration commands allow the user to configure the Dial Peer VoIP parameters.

Enter this sub-group with the **(config)# dial-peer voice voip** *port* command from the Configuration mode.

The Dial Peer VoIP commands are represented by the **(config-dpeer-voip)#** prompt.

Dial Peer VoIP Commands

- ***destination-pattern***
- ***do***
- ***end***
- ***exit***
- ***history***
- ***no commands***
- ***prefix***
- ***session-target***
- ***strip-digits***
- ***user-id***

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destination-pattern

Use the Dial Peer **destination-pattern** command to define the full telephone number to be used for a dial peer. To delete a preference, see *no destination-pattern* command on page 10-5.

Syntax: `(config-dpeer-voip)# destination-pattern` *number*

Field	Definition
number	Enter the phone number to be used for a dial peer.

Example: `(config-dpeer-voip)# destination-pattern 5551212`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file.

Syntax: `(config-dpeer-voip) end`

Example:
```
(config-dpeer-voip)# end
#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-dpeer-voip)# exit`

Example:
```
(config-dpeer-voip)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-dpeer-voip)# history`

Example:
```
(config-dpeer-voip)# history

exit
destination-pattern ddddd
destination-pattern
modem-protocol none
sip-authentication
sip-authentication enable
history
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no commands

no destination-pattern

Use the Dial Peer **no destination-pattern** command to remove a destination pattern. To set the destination pattern, see *destination-pattern* command on page 10-2.

Syntax: `(config-dpeer-voip)# no destination-pattern`

Example: `(config-dpeer-voip)# no destination-pattern`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no prefix

Use the Dial Peer **no prefix** command to remove the prefix of the phone number. To define a prefix, see *prefix* command on page 10-6.

Syntax: `(config-dpeer-voip)# no prefix`

Example: `(config-dpeer-voip)# no prefix 1303`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no session-target

Use the Dial Peer **no session-target** command to remove session target. To configure a session target, see *session-target* command on page 10-6.

Syntax: `(config-dpeer-voip)# no session-target`

Example: `(config-dpeer-voip)# no session target`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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prefix

Use the Dial Peer **prefix** command to define the prefix of the phone number. To delete a prefix, see *no prefix* command on page 10-5.

Syntax: **(config-dpeer-voip)# prefix** *prefix*

Field	Definition
prefix	Prefix is the digits or a name to be added to the phone number after the stripping process has been applied. Up to 10 digits may be entered.

Example: **(config-dpeer-voip)# prefix 1303**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

session-target

Use the Dial Peer **session-target** command to configure the session target. To delete a target, see *no session-target* command on page 10-5.

Syntax: **(config-dpeer-voip)# session-target {hostname** *hostname*|**ip-address** *address*|**local** *fxs-number*|**proxy}**

Field	Definition
hostname	Indicates that the domain name server will be used to resolve the name of the IP address.
address	Enter the IP address of the dial peer.
fxs-number	Enter an FXS port. **Adit 3104:** Range = 1 - 24. **Adit 3500:** Range = 1 - 4. **MSR:** Range = 1 - 48.
proxy	Set the session target to be routed through the proxy.

Example: **(config-dpeer-voip)# session-target ip-address 192.168.1.100**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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strip-digits

Use the Dial Peer **strip-digits** command to configure the number of digits (or characters) to be stripped off from the left most digits in the phone number. Possible usages include stripping off the area code, or the 3-digit office prefix.

Syntax: `(config-dpeer-voip)# strip-digits` *number*

Field	Definition
number	Range is based on the defined phone number. Default is set to 0.

Example: `(config-dpeer-voip)# strip-digits 4`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

user-id

Use the Dial Peer **user-id** command to configure a user ID for the line.

Syntax: `(config-dpeer-voip)# user-id` *user-id*

Field	Definition
user-id	Enter a user ID for the line, with a maximum of 20 characters.

Example: `(config-dpeer-voip)# user-id testname`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 11

Configuration - Ethernet Interface Mode

The Ethernet Interface Configuration commands allow the user to configure the Ethernet interface parameters.

Enter this sub-group with the **(config)# interface ethernet** command from the Configuration mode. The Ethernet Interface commands are represented by the **(config-int-eth-{*n*})#** prompt.

Ethernet Interface Commands

- ***description***
- ***do***
- ***end***
- ***exit***
- ***firewall***
- ***full-duplex***
- ***half-duplex***
- ***history***
- ***ip address***
- ***ip default-gateway***
- ***ip default-route***
- ***ip dhcp***
- ***ip mtu***
- ***ip ospf authentication***
- ***ip ospf authentication-key***
- ***ip ospf cost***
- ***ip ospf dead-interval***
- ***ip ospf disable***
- ***ip ospf hello-interval***
- ***ip ospf message-digest-key***
- ***ip ospf priority***
- ***ip ospf retransmit-interval***
- ***ip ospf transmit-delay***
- ***ip primary-dns***
- ***ip proxy-arp***
- ***ip rip***
- ***ip route***
- ***ip route-mode***
- ***ip secondary-dns***
- ***metric***
- ***no commands***
- ***release***
- ***remote-admin***
- ***renew***
- ***schedule-availability***
- ***shutdown***
- ***sip-alg***
- ***speed***
- ***tos***

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description

Use the Ethernet Interface **description** command to set the description for this Ethernet interface.

Syntax: **`(config-int-eth-{`***`n`***`})# description`** *`text`*

Field	Definition
text	Enter a description for the Ethernet interface with a maximum of 64 characters.

Example: **`(config-int-eth-1)# description Eth#1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-int-eth-{n})# end`

Example:
```
(config-int-eth-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-int-eth-{n})# exit`

Example:
```
(config-int-eth-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

firewall

Use the **firewall** command to enable the configured firewall. To delete a preference, see *no firewall* command on page 11-17.

Syntax: `(config-int-eth-{n})# firewall enable`

Example:
```
(config-int-eth-1)# firewall enable
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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full-duplex

Use the Ethernet Interface **full-duplex** command to specify the Ethernet PHY (physical specifications) mode to full duplex.

Syntax: `(config-int-eth-{n})# full-duplex`

Example: `(config-int-eth-1)# full-duplex`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

half-duplex

Use the Ethernet Interface **half-duplex** command to specify the Ethernet PHY (physical specifications) mode to half duplex.

Syntax: `(config-int-eth-{n})# half-duplex`

Example: `(config-int-eth-1)# half-duplex`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: **(config-int-eth-{*n*})# history**

Example: **(config-int-eth-1)# history**

```
schedule-availability rule1
history
full-duplex
ip rip
ip rip enable
ip address
speed auto
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip address

Use the Ethernet Interface **ip address** command to set the IP address for the Ethernet port. To remove an IP address, see *no ip address* command on page 11-17.

Syntax: **(config-int-eth-{*n*})# ip address {*address* mask *mask* [secondary] | auto}**

Field	Definition
address	Enter an IP address to assign to the Ethernet port.
mask	Enter a subnet mask for the Ethernet IP address.
auto	Use DHCP to assign an IP address.
secondary	This optional parameter, defines the address to be a secondary IP address.

Example: **(config-int-eth-1)# ip address 192.168.2.100 mask 255.255.255.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip default-gateway

Use the Ethernet Interface **ip default-gateway** command to set the default gateway for the Ethernet port.

Syntax: `(config-int-eth-{n})# ip default-gateway address`

Field	Definition
address	Enter a default gateway address to the Ethernet port.

Example: `(config-int-eth-1)# ip default-gateway 192.168.100.150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip default-route

Use the Ethernet Interface **ip default-route** command to enable the default route. To disable the default route, see *no ip default-route* command on page 11-17.

Syntax: `(config-int-eth-{n})# ip default-route enable`

Example: `(config-int-eth-1)# ip default-route enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip dhcp

Use the Ethernet Interface **ip dhcp** command to enable the use of DHCP options 66 and 67 to autoconfigure the system. To disable DHCP, see *no ip dhcp* command on page 11-17.

Syntax: `(config-int-eth-{n})# ip dhcp auto-provision`

Example: `(config-int-eth-1)# ip dhcp auto-provision`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip mtu

Use the Ethernet Interface **ip mtu** command to set the Maximum Transmission Unit. Sets the largest packet size (bytes) the network will allow to transmit.

Syntax: **(config-int-eth-{*n*})# ip mtu {*size*|auto}**

Field	Definition
size	Allows the user to set the Maximum Transmission Unit (MTU). **size** = range of 576 to 1500 bytes.
auto	Auto sets the MTU at 1500 bytes.

Example: **(config-int-eth-1)# ip mtu auto**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication

Use the Ethernet Interface **ip ospf authentication** command to enable the authentication method (either message-digest or simple authentication) for this Ethernet interface. To remove the authentication type for this interface set the parameter to null or see *no ip ospf authentication* command on page 11-18.

Note: If an optional parameter is not entered, the authentication method of **simple authentication** is applied to the interface.

Syntax: `(config-int-eth-{n})# ip ospf authentication [message-digest|null]`

Field	Definition
message-digest	Optional parameter. Enables MD5 Authentication on the area.
null	Optional parameter. No authentication is used. **Note:** This is useful for overriding password or message-digest authentication if configured for an area.

Example: `(config-int-eth-1)# ip ospf authentication message-digest`

Note: The authentication key must be defined before this command is implemented.

Therefore if setting **simple authentication**:

Example:
```
ip ospf authentication-key pass777
ip ospf authentication
```

Therefore if setting **message-digest**:

Example:
```
ip ospf message-digest-key 1 md5 pass777
ip ospf authentication message-digest
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication-key

Use the Ethernet Interface **ip ospf authentication-key** command to assign a password to be used by neighboring routers, that are using OSPF's simple password authentication.To remove a previously assigned password, see *no ip ospf authentication-key* command on page 11-18.

Syntax: `(config-int-eth-{n})# ip ospf authentication-key password`

Field	Definition
password	Enter a password, with up to 8 characters.

Example: `(config-int-eth-1)# ip ospf authentication-key pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf cost

Use the Ethernet Interface **ip ospf cost** command to define the cost of sending a packet on this Ethernet interface. To reset the path cost to the default setting of 0, see *no ip ospf cost* command on page 11-18.

Syntax: `(config-int-eth-{n})# ip ospf cost cost`

Field	Definition
cost	Range is 1-65535, with a default of 0.

Example: `(config-int-eth-1)# ip ospf cost 5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf dead-interval

Use the Ethernet Interface **ip ospf dead-interval** command to define the interval of time that no hello packets have been seen before neighbors declare the router down. To reset the interval of time to the default setting of 40 seconds, see *no ip ospf dead-interval* command on page 11-18.

Syntax: `(config-int-eth-{n})# ip ospf dead-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 40. **Note: This value must be the same for all nodes on the network.**

Example: `(config-int-eth-1)# ip ospf dead-interval 50`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf disable

Use the Ethernet Interface **ip ospf disable** command to disable OSPF processing on this interface. To enable OSPF on this interface, see *no ip ospf disable* command on page 11-19.

Syntax: `(config-int-eth-{n})# ip ospf disable all`

Example: `(config-int-eth-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf hello-interval

Use the Ethernet Interface **ip ospf hello-interval** command to define the interval of time between hello packets sent on the interface. To reset the interval of time to the default setting of the path cost to the default setting of 10 seconds, see *no ip ospf hello-interval* command on page 11-19.

Syntax: `(config-int-eth-{n})# ip ospf hello-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 10. **Note: This value must be the same for all nodes on the network.**

Example: `(config-int-eth-1)# ip ospf hello-interval 12`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf message-digest-key

Use the Ethernet Interface **ip ospf message-digest-key** command to enable OSPF MD5 (Message-Digest) authentication. To remove an old MD5 key, see *no ip ospf message-digest-key* command on page 11-19.

Syntax: `(config-int-eth-{n})# ip ospf message-digest-key key-id md5 key`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.
key	Enter a alphanumeric password, with up to 8 characters.

Example: `(config-int-eth-1)# ip ospf message-digest-key 1 md5 pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf priority

Use the Ethernet Interface **ip ospf priority** command to set the router priority, which determines the designated router for this network. To restore the default setting of priority 1, see *no ip ospf priority* command on page 11-20.

Syntax: `(config-int-eth-{n})# ip ospf priority priority`

Field	Definition
priority	Enter an ID for this key. Range is 0-255.

Example: `(config-int-eth-1)# ip ospf priority 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf retransmit-interval

Use the Ethernet Interface **ip ospf retransmit-interval** command to define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface. To restore the default value of 5 seconds, see *no ip ospf retransmit-interval* command on page 11-20.

Syntax: `(config-int-eth-{n})# ip ospf retransmit-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 5.

Example: `(config-int-eth-1)# ip ospf retransmit-interval 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf transmit-delay

Use the Ethernet Interface **ip ospf transmit-delay** command to define the estimated time to transmit a link state update packet on the interface. To restore the default value of 1 second, see *no ip ospf transmit-delay* command on page 11-20.

Syntax: `(config-int-eth-{n})# ip ospf transmit-delay seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 1.

Example: `(config-int-eth-1)# ip ospf retransmit-interval 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip primary-dns

Use the Ethernet Interface **ip primary-dns** command to configure the primary DNS. To delete a primary DNS, see *no ip primary-dns* command on page 11-20.

Syntax: `(config-int-eth-{n})# ip primary-dns address`

Field	Definition
address	Enter the IP address of the primary server.

Example: `(config-int-eth-1)# ip primary-dns 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip proxy-arp

Use the Ethernet Interface **ip proxy-arp** command to enable proxy ARP on this interface. To disable prosy ARP, see *no ip proxy-arp* command on page 11-21.

Syntax: `(config-int-eth-{n})# ip proxy-arp`

Example: `(config-int-eth-1)# ip proxy-arp`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip rip

ip rip enable

Use the Ethernet Interface **ip rip enable** command to enable RIP on this interface. To disable RIP, see *no ip rip* command on page 11-21.

Syntax: `(config-int-eth-{n})# ip rip enable`

Example: `(config-int-eth-1)# ip rip enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip receive-version

Use the Ethernet Interface **ip rip receive-version** command to configure the RIP receive messages on this interface.

Syntax: `(config-int-eth-{n})# ip rip receive-version {1|2|1or2|none}`

Field	Definition
1	Receive RIP version 1
2	Receive RIP version 2
1or2	Receive RIP version 1 and 2.
none	Set RIP version to none.

Example: `(config-int-eth-1)# ip rip receive-version none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip send-version

Use the Ethernet Interface **ip rip send-version** command to configure the send RIP messages on this interface.

Syntax: `(config-int-eth-{n})# ip rip send-version {1|2-bcast|2-mcast|none}`

Field	Definition
1	Send RIP version 1.
2-bcast	Send RIP version 2 - Broadcast.
2-mcast	Send RIP version 2 - Multicast.
none	Set send RIP version to none.

Example: `(config-int-eth-1)# ip rip send-version 2-bcast`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip route

Use the Ethernet Interface **ip route** command to configure the static routes on this interface. To delete a route, see *no ip route* command on page 11-21.

Syntax: **(config-int-eth-{***n***})# ip route** *dest-ip-addr* **mask** *mask* **gateway** *gateway* **metric** *metric*

Field	Definition
dest-ip-addr	Enter the destination IP address.
mask	Enter the mask of the above address.
gateway	Enter the gateway IP address.
metric	Metric of IP network on this interface in the Routing Table. Range is 0-255, with a default is 10.

Example: **(config-int-eth-1)# ip route 192.168.100.200 mask 255.255.255.0 gateway 192.168.100.254 metric 125**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route-mode

Use the Ethernet Interface **ip route-mode** command to configure the routing mode.

Syntax: **(config-int-eth-{***n***})# ip route-mode {napt|route}**

Field	Definition
napt	Set to NAPT mode. Default. NAPT is used if doing private IPs on the Ethernet side or if you want to hide specific publics on the internal side.
route	Set to Route mode. Routing is used if public is visible on both sides.

Example: **(config-int-eth-1)# ip route-mode napt**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip secondary-dns

Use the Ethernet Interface **ip secondary-dns** command to configure the secondary DNS. To delete a secondary DNS address, see *no ip secondary-dns* command on page 11-21.

Syntax: `(config-int-eth-{n})# ip secondary-dns address`

Field	Definition
address	Enter the IP address of the secondary Domain Name Server (DNS).

Example: `(config-int-eth-1)# ip secondary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

metric

Use the Ethernet Interface **metric** command to configure the Metric of the IP network on this interface.

Syntax: `(config-int-eth-{n})# metric metric`

Field	Definition
metric	Range is 0-255, with a default is 10.

Example: `(config-int-eth-1)# metric 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no firewall

Use the **no firewall** command to disable the configured firewall. To enable the firewall, see *firewall* command on page 11-4.

Syntax: `(config-int-eth-{n})# no firewall`

Example: `(config-int-eth-1)# no firewall`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip address

Use the Ethernet Interface **no ip address** command to remove the IP address from the alias. To set the Ethernet IP address, see *ip address* command on page 11-6.

Syntax: `(config-int-eth-{n})# no ip address` *address*

Field	Definition
address	Enter the IP address to remove.

Example: `(config-int-eth-1)# no ip address 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip default-route

Use the Ethernet Interface **no ip default-route** command to disable the default route. To set the default IP address, see *ip default-route* command on page 11-7.

Syntax: `(config-int-eth-{n})# no ip default-route`

Example: `(config-int-eth-1)# no ip default-route`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip dhcp

Use the Ethernet Interface **no ip dhcp** command to disable the use of DHCP options 66 and 67 to autoconfigure the system. To enable DHCP, see *ip dhcp* command on page 11-7.

Syntax: `(config-int-eth-{n})# no ip dhcp auto-provision`

Example: `(config-int-eth-1)# no ip dhcp auto-provision`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf authentication

Use the Ethernet Interface **no ip ospf authentication** command to disable the authentication method for this Ethernet interface. To enable the authentication type for this interface see *ip ospf authentication* command on page 11-9.

Syntax: `(config-int-eth-{n})# no ip ospf authentication`

Example: `(config-int-eth-{n})# no ip ospf authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication-key

Use the Ethernet Interface **no ip ospf authentication-key** command to remove a password to be used by neighboring routers, that are using OSPF's simple password authentication.To assign a password, see *ip ospf authentication-key* command on page 11-10.

Syntax: `(config-int-eth-{n})# no ip ospf authentication`

Example: `(config-int-eth-1)# no ip ospf authentication-key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf cost

Use the Ethernet Interface **no ip ospf cost** command to reset the cost path to the default setting of 0. To define the cost of sending a packet on this Ethernet interface, see *ip ospf cost* command on page 11-10.

Syntax: `(config-int-eth-{n})# no ip ospf cost`

Example: `(config-int-eth-1)# no ip ospf cost`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf dead-interval

Use the Ethernet Interface **no ip ospf dead-interval** command to reset the interval of time to the default setting of 40 seconds. To define the interval of time that no hello packets have been seen before neighbors declare the router down, see *ip ospf dead-interval* command on page 11-10.

Syntax: `(config-int-eth-{n})# no ip ospf dead-interval`

Example: `(config-int-eth-1)# no ip ospf dead-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf disable

Use the Ethernet Interface **no ip ospf disable** command to enable OSPF processing on this interface. To disable OSPF on this interface, see *ip ospf disable* command on page 11-11.

Syntax: `(config-int-eth-{n})# ip ospf disable all`

Example: `(config-int-eth-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf hello-interval

Use the Ethernet Interface **no ip ospf hello-interval** command to reset the interval of time to the default setting of the path cost to the default setting of 10 seconds. To define the interval of time between hello packets sent on the interface, see *ip ospf hello-interval* command on page 11-11.

Syntax: `(config-int-eth-{n})# no ip ospf hello-interval`

Example: `(config-int-eth-1)# no ip ospf hello-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf message-digest-key

Use the Ethernet Interface **no ip ospf message-digest-key** command to remove an old MD5 key. To enable OSPF MD5 (Message-Digest) authentication, see *ip ospf message-digest-key* command on page 11-11.

Syntax: `(config-int-eth-{n})# no ip ospf message-digest-key key-id`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.

Example: `(config-int-eth-1)# no ip ospf message-digest-key 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf priority

Use the Ethernet Interface **no ip ospf priority** command to set the router priority to the default setting of priority 1. To set the router priority, which determines the designated router for this network, see *ip ospf priority* command on page 11-12.

Syntax: `(config-int-eth-{n})# no ip ospf priority`

Example: `(config-int-eth-1)# no ip ospf priority`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf retransmit-interval

Use the Ethernet Interface **ip ospf retransmit-interval** command to restore the default value of 5 seconds. To define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface, see *ip ospf retransmit-interval* command on page 11-12.

Syntax: `(config-int-eth-{n})# no ip ospf retransmit-interval`

Example: `(config-int-eth-1)# no ip ospf retransmit-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf transmit-delay

Use the Ethernet Interface **no ip ospf transmit-delay** command to restore the default value of 1 second. To define the estimated time to transmit a link state update packet on the interface, see *ip ospf transmit-delay* command on page 11-12.

Syntax: `(config-int-eth-{n})# no ip ospf transmit-delay`

Example: `(config-int-eth-1)# no ip ospf transmit-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip primary-dns

Use the Ethernet Interface **no primary-dns** command to disable the primary DNS. To set the DNS primary IP address, see *ip primary-dns* command on page 11-13.

Syntax: `(config-int-eth-{n})# no ip primary-dns`

Example: `(config-int-eth-1)# no ip primary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip proxy-arp

Use the Ethernet Interface **no ip proxy-arp** command to disable the proxy ARP on this interface. To enable proxy ARP, see *ip proxy-arp* command on page 11-13.

Syntax: `(config-int-eth-{n})# no ip proxy-arp`

Example: `(config-int-eth-1)# no ip proxy-arp`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the Ethernet Interface **no ip rip** command to disable RIP on this interface. To enable RIP, see *ip rip* command on page 11-14.

Syntax: `(config-int-eth-{n})# no ip rip`

Example: `(config-int-eth-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip route

Use the Ethernet Interface **no ip route** command remove an IP route. To add a route, see *ip route* command on page 11-15.

Syntax: `(config-int-eth-{n})# no ip route dest-ip-addr gateway`

Field	Definition
dest-ip-addr	Enter destination IP address to remove.
gateway	Enter gateway IP address to remove.

Example: `(config-int-eth-1)# no ip route 192.168.100.200  192.168.100.254`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip secondary-dns

Use the Ethernet Interface **no secondary-dns** command to disable the secondary DNS. To enable the secondary DNS, see *ip secondary-dns* command on page 11-16.

Syntax: `(config-int-eth-{n})# no ip secondary-dns`

Example: `(config-int-eth-1)# no ip secondary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no remote-admin

Use the Ethernet Interface **no remote-admin** command to disable remote access on this interface. To enable remote access, see *remote-admin* command on page 11-23.

Syntax: `(config-int-eth-{n})# no remote-admin`

Example: `(config-int-eth-1)# no remote-admin`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no schedule-availability

Use the Ethernet Interface **no schedule-availability** command to disable a schedule rule. To create a rule, see *schedule-availability* command on page 11-24.

Syntax: `(config-int-eth-{n})# no schedule-availability`

Example: `(config-int-eth-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no shutdown

Use the Ethernet Interface **no shutdown** command to set the Ethernet port up (In-Service). To set the Ethernet port down (Out-of-Service), see *shutdown* command on page 11-24.

Syntax: `(config-int-eth-{n})# no shutdown`

Example: `(config-int-eth-2)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no sip-alg

Use the Ethernet Interface **no sip-alg** command to disable SIP ALG on this interface. To enable sip alg, see *sip-alg* command on page 11-24.

Syntax: `(config-int-eth-{n})# no sip-alg`

Example: `(config-int-eth-1)# no sip-alg`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no tos ip

Use the Ethernet Interface **no tos ip** command to disable IP TOS marking. To enable TOS marking, see *tos* command on page 11-25.

Syntax: `(config-int-eth-{n})# no tos ip`

Example: `(config-int-eth-1)# no tos ip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

release

Use the Ethernet Interface **release** command to release the DHCP lease.

Syntax: `(config-int-eth-{n})# release`

Example: `(config-int-eth-1)# release`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

remote-admin

Use the Ethernet Interface **remote admin** command to enable Remote Access on this interface. To disable remote access, see *no remote-admin* command on page 11-22.

Syntax: `(config-int-eth-{n})# remote-admin enable`

Example: `(config-int-eth-1)# remote-admin enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

renew

Use the Ethernet Interface **renew** command to renew the DHCP lease.

Syntax: `(config-int-eth-{n})# renew`

Example: `(config-int-eth-1)# renew`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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schedule-availability

Use the Ethernet Interface **schedule-availability** command to apply a schedule rule to this interface. To delete a schedule, see *no schedule-availability* command on page 11-22.

Syntax: `(config-int-eth-{n})# schedule-availability time-range schedule-id`

Field	Definition
schedule-id	Enter an existing schedule rule name. See *time-range* command on page 4-62 to set the schedule-id

Example: `(config-int-eth-1)# schedule-availability time-range 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

shutdown

Use the Ethernet Interface **shutdown** command to set the Ethernet port down (Out-of-Service). **Note:** This command is not allowed if you are in the Ethernet 1 mode. To set the Ethernet port up (In-Service), see *no shutdown* command on page 11-22.

Syntax: `(config-int-eth-{n})# shutdown`

Example: `(config-int-eth-2)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

sip-alg

Use the Ethernet Interface **sip-alg** command to enable SIP ALG on this interface. To disable SIP ALG, see *no sip-alg* command on page 11-22.

Syntax: `(config-int-eth-{n})# sip-alg enable`

Example: `(config-int-eth-1)# sip-alg enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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speed

Use the Ethernet Interface **speed** command to specify the Ethernet PHY (physical specifications) speed.

Syntax: `(config-int-eth-{n})# speed {10|100|auto}`

Field	Definition
10	10 Mbps speed .
100	100 Mbps speed.
auto	Auto-negotiate the speed for the interface. Default. **Note:** Setting speed to auto will set the duplex to auto.

Example: `(config-int-eth-1)# speed 100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

tos

Use the Ethernet Interface **tos** command to configure IP TOS marking. To disable TOS marking, see *no tos ip* command on page 11-23.

Syntax: `(config-int-eth-{n})# tos ip {enable|value hex-value}`

Field	Definition
enable	Enable IP TOS marking.
hex-value	Hex value, range 0x00-0xFF, default is 0x00

Example: `(config-int-eth-1)# tos ip value 0xff`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 12

Configuration - Multilink Interface Mode

The Multilink Interface Configuration commands allow the user to configure the MLPPP parameters.

Enter this sub-group with the **(config)# interface multilink** *number* command from the Configuration mode. The Multilink Interface commands are represented by the **(config-int-mlink-{n})#** prompt.

Note: Before configuring MLPPP parameters, you must create a multilink group from the corresponding Serial interface. Use the **multilink-group** command to create the group.

Multilink Interface Commands

- ***description***
- ***do***
- ***end***
- ***exit***
- ***firewall***
- ***history***
- ***ip address***
- ***ip default-route***
- ***ip mtu***
- ***ip ospf authentication***
- ***ip ospf authentication-key***
- ***ip ospf cost***
- ***ip ospf dead-interval***
- ***ip ospf disable***
- ***ip ospf hello-interval***
- ***ip ospf message-digest-key***
- ***ip ospf priority***
- ***ip ospf retransmit-interval***
- ***ip ospf transmit-delay***
- ***ip primary-dns***
- ***ip rip***
- ***ip route***
- ***ip route-mode***
- ***ip secondary-dns***
- ***metric***
- ***no commands***
- ***ppp authentication***
- ***ppp encryption***
- ***ppp exec-timeout***
- ***ppp link-fragmentation***
- ***ppp on-demand***
- ***ppp password***
- ***ppp qos-interleaving***
- ***ppp restart-timer***
- ***ppp time-btwn-reconnect***
- ***ppp username***
- ***schedule-availability***
- ***shutdown***
- ***sip-alg***

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description

Use the Multilink Interface **description** command to set the description for this Multilink interface.

Syntax: **`(config-int-mlink-{`***`n`***`})# description`** *`text`*

Field	Definition
text	Enter a description for the Multilink interface with a maximum of 64 characters.

Example: **`(config-int-mlink-1)# description MLPPP1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-int-mlink-{n})# end`

Example:
```
(config-int-mlink-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-int-mlink-{n})# exit`

Example:
```
(config-int-mlink-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

firewall

Use the Multilink interface **firewall** command to enable the firewall on this interface. To disable the firewall, see *no firewall* command on page 12-14.

Syntax: `(config-int-mlink-{n})# firewall enable`

Example: `(config-int-mlink-1)# firewall enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: **(config-int-mlink-{*n*})# history**

Example: **(config-int-mlink-1)# history**

```
description testdesc
firewall enable
ip rip enable
ppp authentication pap
ppp encryption 128-bit
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip address

Use the Multilink Interface **ip address** command to configure the MLPPP IP address. To remove an IP address, see *no ip address* command on page 12-14.

Syntax: **(config-int-mlink-{*n*})# ip address {*address* mask *mask*|auto|unnumbered} [secondary]**

Field	Definition
address	Enter an IP address to assign to the port.
mask	Enter a subnet mask for the IP address.
auto	Uses IPCP to assign an IP address.
unnumbered	Set the Multilink IP address to unnumbered.
secondary	This optional parameter, defines the address to be a secondary IP address.

Example: **(config-int-mlink-1)# ip address 192.168.2.100 mask 255.255.255.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip default-route

Use the Multilink Interface **ip default-route** command to enable the default route. To disable the default route, see *no ip default-route* command on page 12-14.

Syntax: `(config-int-mlink-{n})# ip default-route enable`

Example: `(config-int-mlink-1)# ip default-route enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip mtu

Use the Multilink Interface **ip mtu** command to set the Maximum Transmission Unit. Sets the largest packet size (bytes) the network will allow to transmit.

Syntax: `(config-int-mlink-{n})# ip mtu {size|auto}`

Field	Definition
size	Allows the user to set the Maximum Transmission Unit (MTU). **size** = range of 576 to 1500 bytes.
auto	Auto sets the MTU at 1500 bytes.

Example: `(config-int-mlink-1)# ip mtu auto`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication

Use the Multilink Interface **ip ospf authentication** command to enable the authentication method (either message-digest or simple authentication) for this Multilink interface. To remove the authentication type for this interface set the parameter to null or see *no ip ospf authentication* command on page 12-14.

Note: If an optional parameter is not entered, the authentication method of **simple authentication** is applied to the interface.

Syntax: `(config-int-mlink-{n})# ip ospf authentication [message-digest|null]`

Field	Definition
message-digest	Optional parameter. Enables MD5 Authentication on the area.
null	Optional parameter. No authentication is used. **Note:** This is useful for overriding password or message-digest authentication if configured for an area.

Example: `(config-int-mlink-1)# ip ospf authentication message-digest`

Note: The authentication key must be defined before this command is implemented.

Therefore if setting **simple authentication**:

Example:
```
ip ospf authentication-key pass777
ip ospf authentication
```

Therefore if setting **message-digest**:

Example:
```
ip ospf message-digest-key 1 md5 pass777
ip ospf authentication message-digest
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication-key

Use the Multilink Interface **ip ospf authentication-key** command to assign a password to be used by neighboring routers, that are using OSPF's simple password authentication.To remove a previously assigned password, see *no ip ospf authentication-key* command on page 12-15.

Syntax: `(config-int-mlink-{n})# ip ospf authentication-key password`

Field	Definition
password	Enter a password, with up to 8 characters.

Example: `(config-int-mlink-1)# ip ospf authentication-key pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf cost

Use the Multilink Interface **ip ospf cost** command to define the cost of sending a packet on this Multilink interface. To reset the path cost to the default setting of 0, see *no ip ospf cost* command on page 12-15.

Syntax: `(config-int-mlink-{n})# ip ospf cost cost`

Field	Definition
cost	Range is 1-65535, with a default of 0.

Example: `(config-int-mlink-1)# ip ospf cost 5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf dead-interval

Use the Multilink Interface **ip ospf dead-interval** command to define the interval of time that no hello packets have been seen before neighbors declare the router down. To reset the interval of time to the default setting of 40 seconds, see *no ip ospf dead-interval* command on page 12-15.

Syntax: `(config-int-mlink-{n})# ip ospf dead-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 40. **This value must be the same for all nodes on the network.**

Example: `(config-int-mlink-1)# ip ospf dead-interval 50`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf disable

Use the Multilink Interface **ip ospf disable** command to disable OSPF processing on this interface. To enable OSPF on this interface, see *no ip ospf disable* command on page 12-15.

Syntax: `(config-int-mlink-{n})# ip ospf disable all`

Example: `(config-int-mlink-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf hello-interval

Use the Multilink Interface **ip ospf hello-interval** command to define the interval of time between hello packets that sent on the interface. To reset the interval of time to the default setting of the path cost to the default setting of 10 seconds, see *no ip ospf hello-interval* command on page 12-16.

Syntax: `(config-int-mlink-{n})# ip ospf hello-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 10. **This value must be the same for all nodes on the network.**

Example: `(config-int-mlink-1)# ip ospf hello-interval 12`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf message-digest-key

Use the Multilink Interface **ip ospf message-digest-key** command to enable OSPF MD5 (Message-Digest) authentication. To remove an old MD5 key, see *no ip ospf message-digest-key* command on page 12-16.

Syntax: `(config-int-mlink-{n})# ip ospf message-digest-key key-id md5 key`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.
key	Enter a alphanumeric password, with up to 8 characters.

Example: `(config-int-mlink-1)# ip ospf message-digest-key 1 md5 key1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf priority

Use the Multilink Interface **ip ospf priority** command to set the router priority, which determines the designated router for this network. To restore the default setting of priority 1, see *no ip ospf priority* command on page 12-16.

Syntax: **(config-int-mlink-{*n*})# ip ospf priority** *priority*

Field	Definition
priority	Enter an ID for this key. Range is 0-255.

Example: **(config-int-mlink-1)# ip ospf priority 2**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf retransmit-interval

Use the Multilink Interface **ip ospf retransmit-interval** command to define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface. To restore the default value of 5 seconds, see *no ip ospf retransmit-interval* command on page 12-17.

Syntax: **(config-int-mlink-{*n*})# ip ospf retransmit-interval** *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 5.

Example: **(config-int-mlink-1)# ip ospf retransmit-interval 10**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf transmit-delay

Use the Multilink Interface **ip ospf transmit-delay** command to define the estimated time to transmit a link state update packet on the interface. To restore the default value of 1 second, see *no ip ospf transmit-delay* command on page 12-17.

Syntax: **(config-int-mlink-{*n*})# ip ospf transmit-delay** *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 1.

Example: **(config-int-mlink-1)# ip ospf retransmit-interval 10**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip primary-dns

Use the Multilink Interface **ip primary-dns** command to configure the primary DNS. To delete a primary DNS, see *no ip primary-dns* command on page 12-17.

Syntax: `(config-int-mlink-{n})# ip primary-dns address`

Field	Definition
address	Enter the IP address of the primary server.

Example: `(config-int-mlink-1)# ip primary-dns 10.10.5.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip

ip rip enable

Use the Multilink Interface **ip rip enable** command to enable RIP on this interface. To disable RIP, see *no ip rip* command on page 12-17.

Syntax: `(config-int-mlink-{n})# ip rip enable`

Example: `(config-int-mlink-1)# ip rip enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip receive-version

Use the Multilink Interface **ip rip receive-version** command to configure the RIP receive messages on this interface.

Syntax: `(config-int-mlink-{n})# ip rip receive-version {1|2|1or2|none}`

Field	Definition
1|2|1or2	Receive RIP version 1 Receive RIP version 2 Receive RIP version 1 and 2
none	Set RIP version to none.

Example: `(config-int-mlink-1)# ip rip receive-version none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip rip send-version

Use the Multilink Interface **ip rip send-version** command to configure the send RIP messages on this interface.

Syntax: **(config-int-mlink-{*n*})# ip rip send-version {1|2-bcast|2-mcast|none}**

Field	Definition
1	Send RIP version 1.
2-bcast	Send RIP version 2 - Broadcast.
2-mcast	Send RIP version 2 - Multicast.
none	Set RIP version to none.

Example: **(config-int-mlink-1)# ip rip send-version 2-bcast**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route

Use the Multilink Interface **ip route** command to configure the IP routing on this interface. To delete a route, see *no ip route* command on page 12-18.

Syntax: **(config-int-mlink-{*n*})# ip route** *dest-ip-addr* **mask** *mask* **gateway** *gateway* **metric** *metric*

Field	Definition
dest-ip-addr	Enter the destination IP address.
mask	Enter the mask of the above address.
gateway	Enter the gateway IP address.
metric	Metric of IP network on this interface in Routing Table. Range is 0-255, with a default is 10.

Example: **(config-int-mlink-1)# ip route 192.168.100.200 mask 255.255.255.0 gateway 192.168.100.254 mask 125**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip route-mode

Use the Multilink Interface **ip route-mode** command to configure the routing mode.

Syntax: `(config-int-mlink-{n})# ip route-mode {napt|route}`

Field	Definition
napt	Set to NAPT mode. Default. NAPT is used if doing private IPs on the Ethernet side or if you want to hide specific publics on the internal side.
route	Set to Route mode. Routing is used if public is visible on both sides.

Example: `(config-int-mlink-1)# ip route-mode napt`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip secondary-dns

Use the Multilink Interface **ip secondary-dns** command to configure the secondary DNS. To delete a secondary DNS address, see *no ip secondary-dns* command on page 12-18.

Syntax: `(config-int-mlink-{n})# ip secondary-dns address`

Field	Definition
address	Enter the IP address of the secondary Domain Name Server (DNS).

Example: `(config-int-mlink-1)# ip secondary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

metric

Use the Multilink Interface **metric** command to configure the Metric of the IP network on this interface.

Syntax: `(config-int-mlink-{n})# metric metric`

Field	Definition
metric	Range is 0-255, with a default is 10.

Example: `(config-int-mlink-1)# metric 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no firewall

Use the Multilink Interface **no firewall** command to disable the configured firewall. To enable the firewall on this interface, see *firewall* command on page 12-4.

Syntax: `(config-int-mlink-{n})# no firewall`

Example: `(config-int-mlink-1)# no firewall`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip address

Use the Multilink Interface **no ip address** command to remove the IP address assigned to the port. To set the Ethernet IP address, see *ip address* command on page 12-5

Syntax: `(config-int-mlink-{n})# no ip address address`

Field	Definition
address	Enter the IP address to remove.

Example: `(config-int-mlink-1)# no ip address 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip default-route

Use the Multilink Interface **no ip default-route** command to disable the default route. To set the default IP address, see *ip default-route* command on page 12-6.

Syntax: `(config-int-mlink-{n})# no ip default-route`

Example: `(config-int-mlink-1)# no ip default-route`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication

Use the Multilink Interface **no ip ospf authentication** command to disable the authentication method for this Multilink interface. To enable the authentication type for this interface see *ip ospf authentication* command on page 12-7.

Syntax: `(config-int-mlink-{n})# no ip ospf authentication`

Example: `(config-int-mlink-{n})# no ip ospf authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf authentication-key

Use the Multilink Interface **no ip ospf authentication-key** command to remove a password to be used by neighboring routers, that are using OSPF's simple password authentication. To assign a password, see *ip ospf authentication-key* command on page 12-8.

Syntax: `(config-int-mlink-{n})# no ip ospf authentication`

Example: `(config-int-mlink-1)# no ip ospf authentication-key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf cost

Use the Multilink Interface **no ip ospf cost** command to reset the cost path to the default setting of 0. To define the cost of sending a packet on this Multilink interface, see *ip ospf cost* command on page 12-8.

Syntax: `(config-int-mlink-{n})# no ip ospf cost`

Example: `(config-int-mlink-1)# no ip ospf cost`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf dead-interval

Use the Multilink Interface **no ip ospf dead-interval** command to reset the interval of time to the default setting of 40 seconds. To define the interval of time that no hello packets have been seen before neighbors declare the router down, see *ip ospf dead-interval* command on page 12-8.

Syntax: `(config-int-mlink-{n})# no ip ospf dead-interval`

Example: `(config-int-mlink-1)# no ip ospf dead-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf disable

Use the Multilink Interface **no ip ospf disable** command to enable OSPF processing on this interface. To disable OSPF on this interface, see *ip ospf disable* command on page 12-9.

Syntax: `(config-int-mlink-{n})# ip ospf disable all`

Example: `(config-int-mlink-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf hello-interval

Use the Multilink Interface **no ip ospf hello-interval** command to reset the interval of time to the default setting of the path cost to the default setting of 10 seconds. To define the interval of time between hello packets sent on the interface, see *ip ospf hello-interval* command on page 12-9.

Syntax: `(config-int-mlink-{n})# no ip ospf hello-interval`

Example: `(config-int-mlink-1)# no ip ospf hello-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf message-digest-key

Use the Multilink Interface **no ip ospf message-digest-key** command to remove an old MD5 key. To enable OSPF MD5 (Message-Digest) authentication, see *ip ospf message-digest-key* command on page 12-9.

Syntax: `(config-int-mlink-{n})# no ip ospf message-digest-key key-id`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.

Example: `(config-int-mlink-1)# no ip ospf message-digest-key 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf priority

Use the Multilink Interface **no ip ospf priority** command to set the router priority to the default setting of priority 1. To set the router priority, which determines the designated router for this network, see *ip ospf priority* command on page 12-10.

Syntax: `(config-int-mlink-{n})# no ip ospf priority`

Example: `(config-int-mlink-1)# no ip ospf priority`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf retransmit-interval

Use the Multilink Interface **ip ospf retransmit-interval** command to restore the default value of 5 seconds. To define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface, see *ip ospf retransmit-interval* command on page 12-10.

Syntax: `(config-int-mlink-{n})# no ip ospf retransmit-interval`

Example: `(config-int-mlink-1)# no ip ospf retransmit-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf transmit-delay

Use the Multilink Interface **no ip ospf transmit-delay** command to restore the default value of 1 second. To define the estimated time to transmit a link state update packet on the interface, see *ip ospf transmit-delay* command on page 12-10.

Syntax: `(config-int-mlink-{n})# no ip ospf transmit-delay`

Example: `(config-int-mlink-1)# no ip ospf transmit-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip primary-dns

Use the Multilink Interface **no primary-dns** command to disable the primary DNS. To set the DNS primary IP address, see *ip primary-dns* command on page 12-11.

Syntax: `(config-int-mlink-{n})# no ip primary-dns`

Example: `(config-int-mlink-1)# no ip primary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the Multilink Interface **no ip rip** command to disable RIP on this interface. To enable RIP, see *ip rip* command on page 12-11.

Syntax: `(config-int-mlink-{n})# no ip rip`

Example: `(config-int-mlink-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip route

Use the Multilink Interface **no ip route** command remove an IP route. To add a route, see *ip route* command on page 12-12.

Syntax: `(config-int-mlink-{n})# no ip route dest-ip-addr gateway`

Field	Definition
dest-ip-addr	Enter destination IP address to remove.
gateway	Enter gateway IP address to remove.

Example:
```
(config-int-mlink-1)# no ip route 192.168.100.200
192.168.100.254
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip secondary-dns

Use the Multilink Interface **no secondary-dns** command to disable the secondary DNS. To enable the secondary DNS, see *ip secondary-dns* command on page 12-13.

Syntax: `(config-int-mlink-{n})# no ip secondary-dns`

Example:
```
(config-int-mlink-1)# no ip secondary-dns
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp authentication

Use the Multilink Interface **no ppp authentication** command disable PPP authentication. To enable PPP authentication, see *ppp authentication* command on page 12-21.

Syntax: `(config-int-mlink-{n})# no ppp authentication`

Example:
```
(config-int-mlink-1)# no ppp authentication
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp encryption

Use the Multilink Interface **no ppp encryption** command to disable PPP encryption. To enable PPP encryption, see *ppp encryption* command on page 12-21.

Syntax: `(config-int-mlink-{n})# no ppp encryption`

Example:
```
(config-int-mlink-1)# no ppp encryption
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp on-demand

Use the Multilink Interface **no ppp on-demand** command to disable PPP on-demand. To enable PPP on demand, see *ppp on-demand* command on page 12-22.

Syntax: `(config-int-mlink-{n})# no ppp on-demand`

Example: `(config-int-mlink-1)# no ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp password

Use the Multilink Interface **no ppp password** command to remove the PPP password. To set the PPP password, see *ppp password* command on page 12-22.

Syntax: `(config-int-mlink-{n})# no ppp password`

Example: `(config-int-mlink-1)# no ppp password`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp qos interleaving

Use the Multilink Interface **no ppp qos interleaving** command to disable PPP QoS interleaving. To enable PPP QoS interleaving, see *ppp qos-interleaving* command on page 12-23.

Syntax: `(config-int-mlink-{n})# no ppp qos interleaving`

Example: `(config-int-mlink-1)# no ppp qos interleaving`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp username

Use the Multilink Interface **no ppp username** command remove the PPP username. To set a PPP user, see *ppp username* command on page 12-24.

Syntax: `(config-int-mlink-{n})# no ppp username`

Example: `(config-int-mlink-1)# no ppp username`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no schedule-availability

Use the Multilink Interface **no schedule-availability** command to disable a schedule rule. To add a rule, see *schedule-availability* command on page 12-24.

Syntax: `(config-int-mlink-{n})# no schedule-availability`

Example: `(config-int-mlink-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no shutdown

Use the Multilink Interface **no shutdown** command to set the Multilink port up (In-Service). To set the interface down (Out-of-Service), see *shutdown* command on page 12-24.

Syntax: `(config-int-mlink-{n})# no shutdown`

Example: `(config-int-mlink-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no sip-alg

Use the Multilink Interface **no sip-alg** command to disable SIP ALG on this interface. To enable SIP ALG, see *sip-alg* command on page 12-25.

Syntax: `(config-int-mlink-{n})# no sip-alg`

Example: `(config-int-mlink-1)# no sip-alg`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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ppp authentication

Use the Multilink Interface **ppp authentication** command to configure the support of authentication types for the password. To disable PPP authentication, see *no ppp authentication* command on page 12-18.

Syntax: `(config-int-mlink-{n})# ppp authentication {chap|ms-chapv1|ms-chapv2|pap}`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chapv1	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password.

Example: `(config-int-mlink-1)# ppp authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp encryption

Use the Multilink Interface **ppp encryption** command to configure the PPP encryption. To disable PPP encryption, see *no ppp encryption* command on page 12-18.

Syntax: `(config-int-mlink-{n})# ppp encryption {40-bit|128-bit}`

Field	Definition
40-bit	Support Encryption (40 bit keys)
128-bit	Support Maximum Strength Encryption (128 bit keys)

Example: `(config-int-mlink-1)# ppp encryption 40-bit`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp exec-timeout

Use the Multilink Interface **ppp exec-timeout** command to configure the PPP maximum idle time before hangup.

Syntax: `(config-int-mlink-{n})# ppp exec-timeout minutes`

Field	Definition
minutes	Range is 0 - 99999 minutes.

Example: `(config-int-mlink-1)# ppp exec-timeout 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp link-fragmentation

Use the Multilink Interface **ppp link-fragmentation** command to configure the threshold byte size of the packet, for Interleaving. **Note:** If the packet is > the set threshold, the packet will be split in half and sent.

Syntax: `(config-int-mlink-{n})# ppp link-fragmentation number`

Field	Definition
number	Range 320 - 1600, with a default of 1600 bytes.

Example: `(config-int-mlink-1)# ppp link-fragmentation 600`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp on-demand

Use the Multilink Interface **ppp on-demand** command to enable on demand the feature. On demand attempts to connect only when packets are sent. To disable PPP on demand, see *no ppp on-demand* command on page 12-19.

Syntax: `(config-int-mlink-{n})# ppp on-demand`

Example: `(config-int-mlink-1)# ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp password

Use the Multilink Interface **ppp password** command set the PPP password. To delete a PPP password, see *no ppp password* command on page 12-19.

Syntax: `(config-int-mlink-{n})# ppp password password`

Field	Definition
password	Enter the PPP password, with a maximum of 19 characters.

Example: `(config-int-mlink-1)# ppp username test-user-pswrd`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp qos-interleaving

Use the Multilink Interface **ppp qos-interleaving** command enable PPP Quality of Service Interleaving. To disable PPP QoS Interleaving, see *no ppp qos interleaving* command on page 12-19.

Syntax: `(config-int-mlink-{n})# ppp qos-interleaving`

Example: `(config-int-mlink-1)# ppp qos-interleaving`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp restart-timer

Use the Multilink Interface **ppp restart-timer** command to configure the PPP restart timer.

Syntax: `(config-int-mlink-{n})# ppp restart-timer seconds`

Field	Definition
enable	Enable IP TOS marking.

Example: `(config-int-mlink-1)# ppp restart-timer 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp time-btwn-reconnect

Use the Multilink Interface **ppp time-btwn-reconnect** command configure the time between reconnect attempts.

Syntax: `(config-int-mlink-{n})# ppp time-btwn-reconnect seconds`

Field	Definition
seconds	Set the interval of time between reconnect attempts. Range is 0 - 99999 seconds. Default is 30 seconds.

Example: `(config-int-mlink-1)# ppp time-btwn-reconnect 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp username

Use the Multilink Interface **ppp username** command set the PPP Login User Name. To delete a PPP user, see *no ppp qos interleaving* command on page 12-19.

Syntax: **(config-int-mlink-{*n*})# ppp username** *username*

Field	Definition
username	Enter the Username, with a maximum of 19 characters.

Example: **(config-int-mlink-1)# ppp username test-user-name**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

schedule-availability

Use the Multilink Interface **schedule-availability** command to apply a schedule rule to this interface. To delete a schedule, see *no schedule-availability* command on page 12-20.

Syntax: **(config-int-mlink-{*n*})# schedule-availability time-range** *schedule-id*

Field	Definition
schedule-id	Enter an existing schedule rule name. See *time-range* command on page 4-62 to set the schedule-id

Example: **(config-int-mlink-1)# schedule-availability time-range 1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

shutdown

Use the Multilink Interface **shutdown** command to disable the multilink port. To set the Multilink port up (In-Service), see *no shutdown* command on page 12-20.

Syntax: **(config-int-mlink-{*n*})# shutdown**

Example: **(config-int-mlink-1)# shutdown**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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sip-alg

Use the Multilink Interface **sip-alg** command to enable SIP ALG. To disable SIP ALG, see *no sip-alg* command on page 12-20.

Syntax: `(config-int-mlink-{n})# sip-alg enable`

Example: `(config-int-mlink-1)# sip-alg enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 13

Configuration - Serial Interface Mode

The Serial Interface Configuration commands allow the user to configure the serial interface parameters.

Enter this sub-group with the **(config)# interface serial** *number* command from the Configuration mode.

The Serial Interface commands are represented by the **(config-int-ser-{*n*})#** prompt.

Note: Before configuring serial interface parameters, you must enable PPP encapsulation on the interface using the **encapsulation ppp** command.

Serial Interface Commands

- ***description***
- ***do***
- ***encapsulation ppp***
- ***end***
- ***exit***
- ***firewall***
- ***history***
- ***ip address***
- ***ip default-route***
- ***ip mtu***
- ***ip ospf authentication***
- ***ip ospf authentication-key***
- ***ip ospf cost***
- ***ip ospf dead-interval***
- ***ip ospf disable***
- ***ip ospf hello-interval***
- ***ip ospf message-digest-key***
- ***ip ospf priority***
- ***ip ospf retransmit-interval***
- ***ip ospf transmit-delay***
- ***ip primary-dns***
- ***ip rip***
- ***ip route***
- ***ip route-mode***
- ***ip secondary-dns***
- ***metric***
- ***multilink-group***
- ***no commands***
- ***ppp authentication***
- ***ppp encryption***
- ***ppp exec-timeout***
- ***ppp link-fragmentation***
- ***ppp on-demand***
- ***ppp password***
- ***ppp restart-timer***
- ***ppp time-btwn-reconnect***
- ***ppp username***
- ***schedule-availability***
- ***shutdown***
- ***sip-alg***

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description

Use the Serial Interface **description** command to set the description for this serial interface.

Syntax: **`(config-int-ser-{`***`n`***`})# description`** *`text`*

Field	Definition
text	Enter a description for the serial interface with a maximum of 64 characters.

Example: **`(config-int-ser-1)# description Serial1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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encapsulation ppp

Use the Serial Interface **encapsulation ppp** command to enable PPP encapsulation. To disable encapsulation, see *no encapsulation ppp* command on page 13-14.

Syntax: `(config-int-ser-{n})# encapsulation ppp`

Example:
```
(config-int-ser-1)# encapsulation ppp
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-int-ser-{n})# end`

Example:
```
(config-int-ser-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-int-ser-{n})# exit`

Example:
```
(config-int-ser-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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firewall

Use the Serial Interface **firewall** command to enable the configured firewall. To delete a preference, see *no firewall* command on page 13-14.

Syntax: `(config-int-ser-{n})# firewall enable`

Example: `(config-int-ser-1)# firewall enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-int-ser-{n})# history`

Example: `(config-int-ser-1)# history`

```
encapsulation ppp
metric
ppp on-demand
ppp encryption 128-bit
ppp restart-timer 10
ppp time-btwn-reconnect 40
ip rip enable
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip address

Use the Serial Interface **ip address** command to configure the IP address for the serial interface. To remove an IP address, see *no ip address* command on page 13-15.

Syntax: `(config-int-ser-{n})# ip address {address mask mask|auto|unnumbered} [secondary]`

Field	Definition
address	Enter an IP address to assign to the port.
mask	Enter a subnet mask for the IP address.
auto	Uses IPCP to assign an IP address.
unnumbered	Treat this as an un-numbered interface, as per RFC 1812.
secondary	Optional parameter, defines the address to be a secondary IP address.

Example: `(config-int-ser-1)# ip address 192.168.2.100 mask 255.255.255.0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip default-route

Use the Serial Interface **ip default-route** command to enable the default route. To disable the default route, see *no ip default-route* command on page 13-15.

Syntax: `(config-int-ser-{n})# ip default-route enable`

Example: `(config-int-ser-1)# ip default-route enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip mtu

Use the Serial Interface **ip mtu** command to set the Maximum Transmission Unit. Sets the largest packet size (bytes) the network will allow to transmit.

Syntax: `(config-int-ser-{n})# ip mtu {size|auto}`

Field	Definition
size	Allows the user to set the Maximum Transmission Unit (MTU). **size** = range of 576 to 1500 bytes.
auto	Auto sets the MTU at 1500 bytes.

Example: `(config-int-ser-1)# ip mtu auto`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication

Use the Serial Interface **ip ospf authentication** command to enable the authentication method (either message-digest or simple authentication) for this serial interface. To remove the authentication type for this interface set the parameter to null or see *no ip ospf authentication* command on page 13-15.

Note: If an optional parameter is not entered, the authentication method of **simple authentication** is applied to the interface.

Syntax: `(config-int-ser-{n})# ip ospf authentication [message-digest|null]`

Field	Definition
message-digest	Optional parameter. Enables MD5 Authentication on the area.
null	Optional parameter. No authentication is used. **Note:** This is useful for overriding password or message-digest authentication if configured for an area.

Example:
```
(config-int-ser-1)# ip ospf authentication message-digest
```

Note: The authentication key must be defined before this command is implemented.

Therefore if setting **simple authentication**:

Example:
```
ip ospf authentication-key pass777
ip ospf authentication
```

Therefore if setting **message-digest**:

Example:
```
ip ospf message-digest-key 1 md5 pass777
ip ospf authentication message-digest
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication-key

Use the Serial Interface **ip ospf authentication-key** command to assign a password to be used by neighboring routers, that are using OSPF's simple password authentication.To remove a previously assigned password, see *no ip ospf authentication-key* command on page 13-15.

Syntax: `(config-int-ser-{n})# ip ospf authentication-key password`

Field	Definition
password	Enter a password, with up to 8 characters.

Example: `(config-int-ser-1)# ip ospf authentication-key pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf cost

Use the Serial Interface **ip ospf cost** command to define the cost of sending a packet on this serial interface. To reset the path cost to the default setting of 0, see *no ip ospf cost* command on page 13-16.

Syntax: `(config-int-ser-{n})# ip ospf cost cost`

Field	Definition
cost	Range is 1-65535, with a default of 0.

Example: `(config-int-ser-1)# ip ospf cost 5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf dead-interval

Use the Serial Interface **ip ospf dead-interval** command to define the interval of time that no hello packets have been seen before neighbors declare the router down. To reset the interval of time to the default setting of 40 seconds, see *no ip ospf dead-interval* command on page 13-16.

Syntax: `(config-int-ser-{n})# ip ospf dead-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 40. **Note: This value must be the same for all nodes on the network.**

Example: `(config-int-ser-1)# ip ospf dead-interval 50`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf disable

Use the Serial Interface **ip ospf disable** command to disable OSPF processing on this interface. To enable OSPF on this interface, see *no ip ospf disable* command on page 13-16.

Syntax: `(config-int-ser-{n})# ip ospf disable all`

Example: `(config-int-ser-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf hello-interval

Use the Serial Interface **ip ospf hello-interval** command to define the interval of time between hello packets sent on the interface. To reset the interval of time to the default setting of the path cost to the default setting of 10 seconds, see *no ip ospf hello-interval* command on page 13-16.

Syntax: `(config-int-ser-{n})# ip ospf hello-interval seconds`

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 10. **Note: This value must be the same for all nodes on the network.**

Example: `(config-int-ser-1)# ip ospf hello-interval 12`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf message-digest-key

Use the Serial Interface **ip ospf message-digest-key** command to enable OSPF MD5 (Message-Digest) authentication. To remove an old MD5 key, see *no ip ospf message-digest-key* command on page 13-17.

Syntax: `(config-int-ser-{n})# ip ospf message-digest-key key-id md5 key`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.
key	Enter a alphanumeric password, with up to 8 characters.

Example: `(config-int-ser-1)# ip ospf message-digest-key 1 md5 key1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf priority

Use the Serial Interface **ip ospf priority** command to set the router priority, which determines the designated router for this network. To restore the default setting of priority 1, see *no ip ospf priority* command on page 13-17.

Syntax: **(config-int-ser-{*n*})# ip ospf priority** *priority*

Field	Definition
priority	Enter an ID for this key. Range is 1-255.

Example: **(config-int-ser-1)# ip ospf priority 2**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf retransmit-interval

Use the Serial Interface **ip ospf retransmit-interval** command to define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface. To restore the default value of 5 seconds, see *no ip ospf retransmit-interval* command on page 13-17.

Syntax: **(config-int-ser-{*n*})# ip ospf retransmit-interval** *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 5.

Example: **(config-int-ser-1)# ip ospf retransmit-interval 10**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf transmit-delay

Use the Serial Interface **ip ospf transmit-delay** command to define the estimated time to transmit a link state update packet on the interface. To restore the default value of 1 second, see *no ip ospf transmit-delay* command on page 13-17.

Syntax: **(config-int-ser-{*n*})# ip ospf transmit-delay** *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 1.

Example: **(config-int-ser-1)# ip ospf retransmit-interval 10**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip primary-dns

Use the Serial Interface **ip primary-dns** command to configure the primary DNS. To delete a primary DNS, see *no ip primary-dns* command on page 13-18.

Syntax: `(config-int-ser-{n})# ip primary-dns address`

Field	Definition
address	Enter the IP address of the primary server.

Example: `(config-int-ser-1)# ip primary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip

ip rip enable

Use the Serial Interface **ip rip enable** command to enable RIP on this interface. To disable RIP, see *no ip rip* command on page 13-18.

Syntax: `(config-int-ser-{n})# ip rip enable`

Example: `(config-int-ser-1)# ip rip enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip receive-version

Use the Serial Interface **ip rip receive-version** command to configure the RIP receive messages on this interface.

Syntax: `(config-int-ser-{n})# ip rip receive-version {1|2|1or2|none}`

Field	Definition
1|2|1or2	Receive RIP version 1 Receive RIP version 2 Receive RIP version 1 and 2.
none	Set RIP version to none.

Example: `(config-int-ser-1)# ip rip receive-version none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip rip send-version

Use the Serial Interface **ip rip send-version** command to configure the send RIP messages on this interface.

Syntax: **(config-int-ser-{*n*})# ip rip send-version {1|2-bcast|2-mcast|none}**

Field	Definition
1	Send RIP version 1.
2-bcast	Send RIP version 2 - Broadcast.
2-mcast	Send RIP version 2 - Multicast.
none	Set RIP version to none.

Example: **(config-int-ser-1)# ip rip send-version 2-bcast**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route

Use the Ethernet Interface **ip route** command to configure the IP routing on this interface. To delete a route, see *no ip route* command on page 13-18.

Syntax: **(config-int-ser-{*n*})# ip route** *dest-ip-addr* **mask** *mask* **gateway** *gateway* **metric** *metric*

Field	Definition
dest-ip-addr	Enter the destination IP address.
mask	Enter the mask of the above address.
gateway	Enter the gateway IP address.
metric	Metric of IP network on this interface in Routing Table. Range is 0-255, with a default is 10.

Example: **(config-int-ser-1)# ip route 192.168.100.200 mask 255.255.255.0 gateway 192.168.100.254 mask 125**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip route-mode

Use the Serial Interface **ip route-mode** command to configure the routing mode.

Syntax: `(config-int-ser-{n})# ip route-mode {napt|route}`

Field	Definition
napt	Set to NAPT mode. Default. NAPT is used if doing private IPs on the Ethernet side or if you want to hide specific publics on the internal side.
route	Set to Route mode. Routing is used if public is visible on both sides.

Example: `(config-int-ser-1)# ip route-mode napt`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip secondary-dns

Use the Serial Interface **ip secondary-dns** command to configure the secondary DNS. To delete a secondary DNS address, see *no ip secondary-dns* command on page 13-18.

Syntax: `(config-int-ser-{n})# ip secondary-dns address`

Field	Definition
address	Enter the IP address of the secondary Domain Name Server (DNS).

Example: `(config-int-ser-1)# ip secondary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

metric

Use the Serial Interface **metric** command to configure the metric of the IP network on this interface.

Syntax: `(config-int-ser-{n})# metric metric`

Field	Definition
metric	Range is 0-255, with a default is 10.

Example: `(config-int-ser-1)# metric 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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multilink-group

Use the Serial Interface **multilink-group** command to configure a MLPPP group.

Syntax: **(config-int-ser-{*n*})# multilink-group** *group-number*

Field	Definition
group-number	Enter multilink group. **Adit 3104, Adit 3200, Adit 3500:** Value must be 1. **MSR:** Range = 1-8.

Example: **(config-int-ser-1)# multilink-group 1**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no commands

no encapsulation ppp

Use the Serial Interface **no encapsulation ppp** command to disable PPP encapsulation. To enable encapsulation, see *encapsulation ppp* command on page 13-4.

Syntax: **(config-int-ser-{*n*})# no encapsulation ppp**

Example: **(config-int-ser-1)# no encapsulation ppp**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no firewall

Use the Serial Interface **no firewall** command to disable the configured firewall. To enable the firewall, see *firewall* command on page 13-5.

Syntax: **(config-int-ser-{*n*})# no firewall**

Example: **(config-int-ser-1)# no firewall**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip address

Use the Serial Interface **no ip address** command to remove the IP address assigned to the serial interface. To set the Serial IP address, see *ip address* command on page 13-6.

Syntax: `(config-int-ser-{n})# no ip address address`

Field	Definition
address	Enter the IP address to remove.

Example: `(config-int-ser-1)# no ip address 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip default-route

Use the Serial Interface **no ip default-route** command to disable the default route. To set the default IP address, see *ip default-route* command on page 13-6.

Syntax: `(config-int-ser-{n})# no ip default-route`

Example: `(config-int-ser-1)# no ip default-route`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication

Use the Serial Interface **no ip ospf authentication** command to disable the authentication method for this serial interface. To enable the authentication type for this interface see *ip ospf authentication* command on page 13-7.

Syntax: `(config-int-ser-{n})# no ip ospf authentication`

Example: `(config-int-ser-{n})# no ip ospf authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication-key

Use the Serial Interface **no ip ospf authentication-key** command to remove a password to be used by neighboring routers, that are using OSPF's simple password authentication. To assign a password, see *ip ospf authentication-key* command on page 13-8.

Syntax: `(config-int-ser-{n})# no ip ospf authentication`

Example: `(config-int-ser-1)# no ip ospf authentication-key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf cost

Use the Serial Interface **no ip ospf cost** command to reset the cost path to the default setting of 0. To define the cost of sending a packet on this serial interface, see *ip ospf cost* command on page 13-8.

Syntax: `(config-int-ser-{n})# no ip ospf cost`

Example: `(config-int-ser-1)# no ip ospf cost`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf dead-interval

Use the Serial Interface **no ip ospf dead-interval** command to reset the interval of time to the default setting of 40 seconds. To define the interval of time that no hello packets have been seen before neighbors declare the router down, see *ip ospf dead-interval* command on page 13-8.

Syntax: `(config-int-ser-{n})# no ip ospf dead-interval`

Example: `(config-int-ser-1)# no ip ospf dead-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf disable

Use the Serial Interface **no ip ospf disable** command to enable OSPF processing on this interface. To disable OSPF on this interface, see *ip ospf disable* command on page 13-9.

Syntax: `(config-int-ser-{n})# ip ospf disable all`

Example: `(config-int-ser-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf hello-interval

Use the Serial Interface **no ip ospf hello-interval** command to reset the interval of time to the default setting of the path cost to the default setting of 10 seconds. To define the interval of time between hello packets that are sent on the interface, see *ip ospf hello-interval* command on page 13-9.

Syntax: `(config-int-ser-{n})# no ip ospf hello-interval`

Example: `(config-int-ser-1)# no ip ospf hello-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf message-digest-key

Use the Serial Interface **no ip ospf message-digest-key** command to remove an old MD5 key. To enable OSPF MD5 (Message-Digest) authentication, see *ip ospf message-digest-key* command on page 13-9.

Syntax: `(config-int-ser-{n})# no ip ospf message-digest-key key-id`

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.

Example: `(config-int-ser-1)# no ip ospf message-digest-key 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf priority

Use the Serial Interface **no ip ospf priority** command to set the router priority to the default setting of priority 1. To set the router priority, which determines the designated router for this network, see *ip ospf priority* command on page 13-10.

Syntax: `(config-int-ser-{n})# no ip ospf priority`

Example: `(config-int-ser-1)# no ip ospf priority`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf retransmit-interval

Use the Serial Interface **ip ospf retransmit-interval** command to restore the default value of 5 seconds. To define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface, see *ip ospf retransmit-interval* command on page 13-10.

Syntax: `(config-int-ser-{n})# no ip ospf retransmit-interval`

Example: `(config-int-ser-1)# no ip ospf retransmit-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf transmit-delay

Use the Serial Interface **no ip ospf transmit-delay** command to restore the default value of 1 second. To define the estimated time to transmit a link state update packet on the interface, see *ip ospf transmit-delay* command on page 13-10.

Syntax: `(config-int-ser-{n})# no ip ospf transmit-delay`

Example: `(config-int-ser-1)# no ip ospf transmit-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip primary-dns

Use the Serial Interface **no primary-dns** command to disable the primary DNS. To set the DNS primary IP address, see *ip primary-dns* command on page 13-11.

Syntax: `(config-int-ser-{n})# no ip primary-dns`

Example: `(config-int-ser-1)# no ip primary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the Serial Interface **no ip rip** command to disable RIP on this interface. To enable RIP, see *ip rip* command on page 13-11.

Syntax: `(config-int-ser-{n})# no ip rip`

Example: `(config-int-ser-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip route

Use the Serial Interface **no ip route** command remove an IP route. To add a route, see *ip route* command on page 13-12.

Syntax: `(config-int-ser-{n})# no ip route` *dest-ip-addr gateway*

Field	Definition
dest-ip-addr	Enter destination IP address to remove.
gateway	Enter gateway IP address to remove.

Example: `(config-int-ser-1)# no ip route 192.168.100.200 192.168.100.254`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip secondary-dns

Use the Serial Interface **no secondary-dns** command to disable the secondary DNS. To enable the secondary DNS, see *ip secondary-dns* command on page 13-13.

Syntax: `(config-int-ser-{n})# no ip secondary-dns`

Example: `(config-int-ser-1)# no ip secondary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp authentication

Use the Serial Interface **no ppp authentication** command disable PPP authentication. To enable PPP authentication, see *ppp authentication* command on page 13-21.

Syntax: `(config-int-ser-{n})# no ppp authentication`

Example: `(config-int-ser-1)# no ppp authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp encryption

Use the Serial Interface **no ppp encryption** command to disable PPP encryption. To enable PPP encryption, see *ppp encryption* command on page 13-21.

Syntax: `(config-int-ser-{n})# no ppp encryption`

Example: `(config-int-ser-1)# no ppp encryption`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp on-demand

Use the Serial Interface **no ppp on-demand** command to disable PPP on-demand. To enable PPP on demand, see *ppp on-demand* command on page 13-22.

Syntax: `(config-int-ser-{n})# no ppp on-demand`

Example: `(config-int-ser-1)# no ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp password

Use the Serial Interface **no ppp password** command to remove the PPP password. To set the PPP password, see *ppp password* command on page 13-22.

Syntax: `(config-int-ser-{n})# no ppp password`

Example: `(config-int-ser-1)# no ppp password`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp username

Use the Serial Interface **no ppp username** command remove the PPP username. To set a PPP user, see *ppp username* command on page 13-23.

Syntax: `(config-int-ser-{n})# no ppp username username`

Example: `(config-int-ser-1)# no ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no schedule-availability

Use the Serial Interface **no schedule-availability** command to disable a schedule rule. To add a rule, see *schedule-availability* command on page 13-24.

Syntax: `(config-int-ser-{n})# no schedule-availability`

Example: `(config-int-ser-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no shutdown

Use the Serial Interface **no shutdown** command to set the serial interface up (In-Service). To set the interface down (Out-of-Service), see *shutdown* command on page 13-24.

Syntax: `(config-int-ser-{n})# no shutdown`

Example: `(config-int-ser-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no sip-alg

Use the Serial Interface **no sip-alg** command to disable SIP ALG on this interface. To enable SIP ALG, see *sip-alg* command on page 13-24.

Syntax: `(config-int-ser-{n})# no sip-alg`

Example: `(config-int-ser-1)# no sip-alg`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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ppp authentication

Use the Serial Interface **ppp authentication** command to configure the support of authentication types for the password. To disable PPP authentication, see *no ppp authentication* command on page 13-19.

Syntax: `(config-int-ser-{n})# ppp authentication {chap|ms-chap|ms-chapv2|pap}`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chap	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password.

Example: `(config-int-ser-1)# ppp authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp encryption

Use the Serial Interface **ppp encryption** command to configure the PPP encryption. To disable PPP encryption, see *no ppp encryption* command on page 13-19.

Syntax: `(config-int-ser-{n})# ppp encryption {40-bit|128-bit}`

Field	Definition
40-bit	Support Encryption (40 bit keys)
128-bit	Support Maximum Strength Encryption (128 bit keys)

Example: `(config-int-ser-1)# ppp encryption 40-bit`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp exec-timeout

Use the Serial Interface **ppp exec-timeout** command to set the PPP maximum idle time before hangup.

Syntax: `(config-int-ser-{n})# ppp exec-timeout minutes`

Field	Definition
minutes	Range is 0 - 99999 minutes.

Example: `(config-int-ser-1)# ppp exec-timeout 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp link-fragmentation

Use the Serial Interface **ppp link-fragmentation** command to configure the threshold byte size of the packet, for Interleaving. **Note:** If the packet is > the set threshold, the packet will be split in half and sent.

Syntax: `(config-int-ser-{n})# ppp link-fragmentation number`

Field	Definition
number	Range 320 - 1600, with a default of 1600 bytes.

Example: `(config-int-ser-1)# ppp link-fragmentation 600`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp on-demand

Use the Serial Interface **ppp on-demand** command to enable on demand the feature. On demand attempts to connect only when packets are sent. To disable PPP on demand, see *no ppp encryption* command on page 13-19.

Syntax: `(config-int-ser-{n})# ppp on-demand`

Example: `(config-int-ser-1)# ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp password

Use the Serial Interface **ppp password** command set the PPP password. To delete a PPP password, see *no ppp password* command on page 13-19.

Syntax: `(config-int-ser-{n})# ppp password password`

Field	Definition
password	Enter the PPP password, with a maximum of 19 characters.

Example: `(config-int-ser-1)# ppp username test-user-pswrd`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp restart-timer

Use the Serial Interface **ppp restart-timer** command to configure the PPP restart timer.

Syntax: `(config-int-ser-{n})# ppp restart-timer seconds`

Field	Definition
seconds	Range is 1 - 65535 seconds. Default is 3 seconds.

Example: `(config-int-ser-1)# ppp restart-timer 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp time-btwn-reconnect

Use the Serial Interface **ppp time-btwn-reconnect** command configure the time between reconnect attempts.

Syntax: `(config-int-ser-{n})# ppp time-btwn-reconnect seconds`

Field	Definition
seconds	Set the interval of time between reconnect attempts. Range is 0 - 99999 seconds. Default is 30 seconds.

Example: `(config-int-ser-1)# ppp time-btwn-reconnect 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp username

Use the Serial Interface **ppp username** command set the PPP Login User Name. To delete a PPP user, see *no ppp username* command on page 13-20.

Syntax: `(config-int-ser-{n})# ppp username username`

Field	Definition
username	Enter the Username, with a maximum of 19 characters.

Example: `(config-int-ser-1)# ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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schedule-availability

Use the Serial Interface **schedule-availability** command to apply a schedule rule to this interface. To delete a schedule, see *no schedule-availability* command on page 13-20.

Syntax: `(config-int-ser-{n})# schedule-availability time-range schedule-id`

Field	Definition
schedule-id	Enter an existing schedule rule name. See *time-range* command on page 4-62 to set the schedule-id

Example: `(config-int-ser-1)# schedule-availability time-range 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

shutdown

Use the Serial Interface **shutdown** command to disable the serial interface. To set the serial interface up (In-Service), see *no shutdown* command on page 13-20.

Syntax: `(config-int-ser-{n})# shutdown`

Example: `(config-int-ser-1)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

sip-alg

Use the Serial Interface **sip-alg** command to enable SIP ALG. To disable SIP ALG, see *no sip-alg* command on page 13-20.

Syntax: `(config-int-ser-{n})# sip-alg enable`

Example: `(config-int-ser-1)# sip-alg enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 14

Configuration - IPSec Mode

The IPSecConfiguration commands allow the user to configure the VPN IPSec parameters.

Enter this sub-group with the **(config)# ipsec vpn_ipsec** command from the Configuration mode.

The IPSec commands are represented by the **(config-ipsec-*n*)#** prompt.

Note: First a connection must be created. See *ipsec net-to-host* command on page 4-23, or *ipsec net-to-net* command on page 4-24.

For an example of **Configuring an IPSec Connection**, see *Example of IPSec Connection Configuration* command on page 14-21.

IPSec Commands

- ***aggressive-mode***
- ***authentication***
- ***description***
- ***do***
- ***dpd-delay***
- ***dpd-enable***
- ***dpd-timeout***
- ***encryption***
- ***end***
- ***exit***
- ***group***
- ***hash***
- ***history***
- ***ip route metric***
- ***ipsec-conn***
- ***ipsec-manual***
- ***key***
- ***lifetime***
- ***local-subnet***
- ***max-retries***
- ***mode***
- ***net-type***
- ***netbios remote-brc-addr***
- ***no commands***
- ***reconnect***
- ***rekey***
- ***remote-ip***
- ***remote-subnet***
- ***schedule-availability***
- ***session-key***
- ***set-pfs***
- ***transform-set***

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aggressive-mode

Use the IPSec **aggressive-mode** command to set to aggressive mode, instead of main mode. To set to main mode, see *no aggressive-mode* command on page 14-12.

Syntax: `(config-ipsec {n})# aggressive-mode`

Example: `(config-ipsec-1)# aggressive-mode`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

authentication

Use the IPSec **authentication** command to specify a peer authentication method.

Syntax: `(config-ipsec {n})# authentication {pre-share` *shared-key*`|rsa-sig` *rsa-signature*`|cert` *local-id peer-id*`}`

Field	Definition
pre-shared	Specifies preshared keys as the authentication method. *shared-key*- Enter the Pre-share key.
rsa-sig	Specifies RSA signatures as the authentication method. *rsa-signature* - Enter the RSA signature.
cert	Set Certificate for local ID and Peer ID. *local-id* - Enter the local ID. *peer-id* - Enter the peer ID.

Example: `(config-ipsec-1)# authentication pre-share mysecret`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

description

Use the IPSec **description** command to enter a description for the connection.

Syntax: `(config-ipsec {n})# description` *description*

Field	Definition
description	Enter a description, with a maximum of 64 characters.

Example: `(config-ipsec-1)# description Boulder VPN IPSec0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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dpd-delay

Use the IPSec **dpd-delay** command to set the Dead Period Detection delay. To set the DPD delay back to the default settings, see *no dpd-delay* command on page 14-12.

Syntax: `(config-ipsec {n})# dpd-delay` *seconds*

Field	Definition
seconds	Set the delay time in seconds. Range 1-3600 seconds, with a default of 60.

Example: `(config-ipsec-1)# dpd-delay 200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

dpd-enable

Use the IPSec **dpd-enable** command to enable Dead Period Detection (DPD). To disable DPD, see *no dpd-enable* command on page 14-12.

Syntax: `(config-ipsec {n})# dpd-enable`

Example: `(config-ipsec-1)# dpd-enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

dpd-timeout

Use the IPSec **dpd-timeout** command to set the Dead Period Detection (DPD) timeout period. To reset DPD timeout to default setting, see *no dpd-timeout* command on page 14-12.

Syntax: `(config-ipsec {n})# dpd-timeout` *seconds*

Field	Definition
seconds	Set the timeout period in seconds. Range 1-9999 seconds, with a default of 120.

Example: `(config-ipsec-1)# dpd-timeout`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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encryption

Use the IPSec **encryption** command to specify an encryption algorithm. To disable encryption, see *no group* command on page 14-13.

Syntax: `(config-ipsec {n})# encryption {des|3des|aes|aes192|aes256}`

Field	Definition
des	Set to 56-bit Data Encryption Standard (DES).
3des	Set to 168-bit DES. Default.
aes	Set 128-bit Advanced Encryption Standard (AES) as the encryption algorithm.
aes192	Set 192-bit AES as the encryption algorithm.
aes256	Set 256-bit AES as the encryption algorithm.

Example:
```
(config-ipsec-1)# encryption aes192
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-ipsec {n})# end`

Example:
```
(config-ipsec-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-ipsec {n})# exit`

Example:
```
(config-ipsec-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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group

Use the IPSec **group** command to define the Diffie-Hellman (DH) group identifier for phase-1. **Note:** More than one group can be enabled. To disable a DH identifier, see *no group* command on page 14-13.

Syntax: `(config-ipsec {n})# group {1|2|5}`

Field	Definition
1	Set to DH group 1 (768 bit).
2	Set to DH group 2 (1024 bit). Default is enabled.
5	Set to DH group 25 (1536 bit). Default is enabled.

Example: `(config-ipsec-1)# group 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

hash

Use the IPSec **hash** command to specify a hash algorithm. To disable a hash algorithm, see *no hash* command on page 14-14.

Syntax: `(config-ipsec {n})# hash {md5|sha}`

Field	Definition
md5	Set to allow peers to use MD5.
sha	Set to allow peers to use SHA1. SHA = Secure Hash Algorithm.

Example: `(config-ipsec-1)# hash md5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-ipsec {n})# history`

Example: `(config-ipsec-1)# history`

```
dpd
dpd-timeout 900
history
ip rip r
ip rip receive-version 1or2
ip rip enable
reconnect
ipsec-conn enable
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route metric

Use the IPSec mode **ip route metric** command to define a number for the device metric.

Syntax: `(config-ipsec {n})# ip route metric` *metric*

Field	Definition
metric	Enter a number for the device metric. Range is 0-255, with a default of 10.

Example: `(config-ipsec-1)# ip route metric 25`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ipsec-conn

Use the IPSec mode **ipsec-conn** command to enable or disable an IPSec connection without removing it.

Syntax: `(config-ipsec {n})# ipsec-conn {disable|enable}`

Field	Definition
disable	Disable the IPSec connection.
enable	Enable the IPSec connection.

Example: `(config-ipsec-1)# ipsec-conn enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ipsec-manual

Use the IPSec mode **ipsec-manual** command to select manual key exchange method. To enable automatic key exchange method, see *no ipsec-manual* command on page 14-14.

Syntax: `(config-ipsec {n})# ipsec-manual`

Example: `(config-ipsec-1)# ipsec-manual`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

key

Use the IPSec **key** command to set the shared secret key.

Syntax: `(config-ipsec {n})# key` *key*

Field	Definition
key	Enter a shared secret key, with a maximum of 30 characters.

Example: `(config-ipsec-1)# key mysecret`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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lifetime

Use the IPSec mode **lifetime** command to set the connection lifetime.

Syntax: **`(config-ipsec {n})# lifetime time`** *`seconds`*

Field	Definition
seconds	Set the connection lifetime. Range 1-86400 seconds, with a default of 86400.

Example: **`(config-ipsec-1)# lifetime time 70000`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

local-subnet

Use the IPSec mode **local-subnet** command to set the local subnet IP address.

Syntax: **`(config-ipsec {n})# local-subnet {none|range {start-address`** *`address`* **`end-address`** *`address`***`}|single ip`** *`address`***`|subnet ip`** *`address`***`}`**

Field	Definition
none	No IP address.
range	Enter an IP address range. *start-address* - Enter the start IP address of the range. *end-address* - Enter the end IP address of the range.
single ip	Enter a single IP address.
subnet ip	Enter a subnet IP address.

Example: **`(config-ipsec-1)# local-subnet range start-address 192.168.1.1 end-address 192.168.1.10`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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max-retries

Use the IPSec mode **max-retries** command to set a maximum number of negotiation attempts.

Syntax: `(config-ipsec {n})# max-retries` *number*

Field	Definition
number	Valid values: 0, 1, 2, 3, 4, 8, 16, 24, 32, 48, 64. Default is 3. 0 = infinite negotiation attempts.

Example: `(config-ipsec-1)# max-retries 16`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

mode

Use the IPSec mode **mode** command to modify an IPSec security association mode. **Note:** If a router requests tunnel mode, only tunnel mode can be negotiated between the peers. However, if transport mode is requested, either transport or tunnel mode can be negotiated.

Syntax: `(config-ipsec {n})# mode {transport|tunnel}`

Field	Definition
transport	Transport Mode - only the payload of the original IP packet is encrypted and/or authenticated. The protected inside addresses will appear in the original IP headers.
tunnel	Tunnel Mode - The original IP packet is encrypted and/or authenticated and is encapsulated in a new IP packet. Only the peer outside addresses are seen, the protected inside addresses are hidden from view. Default.

Example: `(config-ipsec-1)# mode transport`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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net-type

Use the IPSec mode **net-type** command to define the network type.

Syntax: `(config-ipsec {n})# network-type {dmz|lan|wan}`

Field	Definition
dmz	Demilitarized Zone.
lan	Local Area Network.
wan	Wide Area Network.

Example: `(config-ipsec-1)# net-type lan`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

netbios remote-brc-addr

Use the IPSec **netbios remote-brc-addr** command to set the remote broadcast address for NetBIOS.

Syntax: `(config-ipsec-{n})# netbios remote-brc-addr` *address*

Field	Definition
address	Enter the remote broadcast address.

Example: `(config-ipsec-1)# netbios remote-brc-addr 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no aggressive-mode

Use the IPSec mode **no aggressive-mode** command to set to main mode, instead of aggressive mode. To set to aggressive mode, see *aggressive-mode* command on page 14-2.

Syntax: `(config-ipsec {n})# no aggressive-mode`

Example: `(config-ipsec-1)# no aggressive-mode`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no dpd-delay

Use the IPSec **no dpd-delay** command to reset the Dead Period Detection (DPD) delay back to the default settings. To set the DPD delay, see *dpd-delay* command on page 14-4.

Syntax: `(config-ipsec-{n})# no dpd-delay`

Example: `(config-ipsec-1)# no dpd-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no dpd-enable

Use the IPSec **no dpd-enable** command to disable Dead Period Detection (DPD). To enable DPD, see *dpd-enable* command on page 14-4.

Syntax: `(config-ipsec-{n})# no dpd-enable`

Example: `(config-ipsec-1)# no dpd-enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no dpd-timeout

Use the IPSec **no dpd-timeout** command to set the Dead Period Detection (DPD) timeout to the default setting. To set DPD timeout, see *dpd-timeout* command on page 14-4.

Syntax: `(config-ipsec-{n})# no dpd-timeout`

Example: `(config-ipsec-1)# no dpd-timeout`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no encryption

Use the IPSec **no encryption** command to disable encryption. To configure encryption, see *encryption* command on page 14-5.

Syntax: `(config-ipsec-{n})# no encryption {des|3des|aes|aes192| aes256}`

Field	Definition
des	Disable 56-bit Data Encryption Standard (DES).
3des	Disable 168-bit DES. Default.
aes	Disable 128-bit Advanced Encryption Standard (AES) as the encryption algorithm.
aes192	Disable 192-bit AES as the encryption algorithm.
aes256	Disable 256-bit AES as the encryption algorithm.

Example: `(config-ipsec-1)# no encryption aes`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no group

Use the IPSec **no group** command to disable a Diffie-Hellman (DH) group identifier. To set a DH group identifier, see *group* command on page 14-6.

Syntax: `(config-ipsec-{n})# no group {1|2|5}`

Field	Definition
1	Disable DH group 1 (768 bit).
2	Disable DH group 2 (1024 bit). Default is enabled.
5	Disable DH group 25 (1536 bit). Default is enabled.

Example: `(config-ipsec-1)# no group 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no hash

Use the IPSec **no hash** command to disable a hash algorithm. To set a hash algorithm, see *hash* command on page 14-6.

Syntax: `(config-ipsec-{n})# no hash {md5|sha}`

Field	Definition
md5	Disable the MD5 algorithm.
sha	Disable SHA1. SHA = Secure Hash Algorithm.

Example: `(config-ipsec-1)# no hash md5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the IPSec **no ip rip** command to disable RIP.

Syntax: `(config-ipsec-{n})# no ip rip`

Example: `(config-ipsec-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ipsec-manual

Use the IPSec **no ipsec-manual** command to enable automatic key exchange method. To enable manual key exchange method, see *ipsec-manual* command on page 14-8.

Syntax: `(config-ipsec-{n})# no ipsec-manual`

Example: `(config-ipsec-1)# no ipsec-manual`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no netbios

Use the IPSec **no netbios** command to disable routing of NetBIOS broadcasts. To enable NetBIOS broadcasts, see *netbios remote-brc-addr* command on page 14-11.

Syntax: `(config-ipsec-{n})# no netbios`

Example: `(config-ipsec-1)# no netbios`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no reconnect

Use the IPSec **no reconnect** command to disable automatic reconnection. To enable reconnection, see *reconnect* command on page 14-17.

Syntax: `(config-ipsec-{n})# no reconnect`

Example: `(config-ipsec-1)# no reconnect`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no schedule-availability

Use the IPSec **no schedule-availability** command to set schedule availability to the default value. To set a schedule rule, see *schedule-availability* command on page 14-18.

Syntax: `(config-ipsec-{n})# no schedule-availability`

Example: `(config-ipsec-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no set-pfs

Use the IPSec **no set-pfs** command to disable Perfect Forward Secrecy. To enable PFS, see *set-pfs* command on page 14-19.

Syntax: `(config-ipsec-{n})# no set-pfs`

Example: `(config-ipsec-1)# no set-pfs`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no transform-set

Use the IPSec **no transform-set** command to disable Perfect Forward Secrecy. To enable PFS, see *transform-set* command on page 14-20.

Syntax: `(config-ipsec-{n})# no transform-set {ah-md5|ah-sha|esp-3des|esp-aes|esp-aes192|esp-aes256|esp-des|esp-md5|esp-null|esp-sha|ipcomp}`

Field	Definition
ah-md5	Authentication Header transform using MD5 authentication. Default.
ah-sha	Authentication Header transform using Secure Hash Algorithm (SHA1) authentication. Default.
esp-aes	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 128-bit encryption.
esp-aes192	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 128-bit encryption.
esp-aes256	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 256-bit encryption.
esp-des	Encapsulating Security Payload (ESP) encryption transform using Data Encryption Standard (DES) 56-bit encryption.
esp-3des	Encapsulating Security Payload (ESP) encryption transform using Data Encryption Standard (DES) 168-bit encryption.
esp-null	Encapsulating Security Payload (ESP) encryption transform using no encryption.
esp-md5	Encapsulating Security Payload (ESP) encryption transform using Message-Digest Algorithm 5 (MD5) authentication. Default.
esp-sha	Encapsulating Security Payload (ESP) encryption transform using Secure Hash Algorithm (SHA1) authentication. Default.
ipcomp	IP Payload Compression Protocol (IPComp) compression.

Example: `(config-ipsec-1)# no transform-set esp-md5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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reconnect

Use the IPSec **reconnect** command to enable the automatic reconnection option. To disable reconnection, see *no reconnect* command on page 14-15.

Syntax: `(config-ipsec-{n})# reconnect`

Example: `(config-ipsec-1)# reconnect`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

rekey

Use the IPSec **rekey** command to set the rekey lifetime, rekey margin and rekey fuzz percent.

Syntax: `(config-ipsec-{n})# rekey lifetime seconds margin margin percent percent`

Field	Definition
seconds	Set the connection rekey lifetime. Range is 1-28800 seconds, with a default of 3600.
margin	Set the rekey margin number. Range is 1-540, with a default of 540.
percent	Set the rekey fuzz percent. Range 1-200, with a default of 100.

Example: `(config-ipsec-1)# rekey lifetime 3 margin 500 percent 200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

remote-ip

Use the IPSec **remote-ip** command to modify a remote tunnel endpoint address.

Syntax: `(config-ipsec-{n})# remote-ip address`

Field	Definition
address	Enter a remote IP address.

Syntax: `(config-ipsec-1)# remote-ip 10.10.2.10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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remote-subnet

Use the IPSec **remote-subnet** command to set the remote subnet IP address.

Syntax: `(config-ipsec-{n})# remote-subnet {none|range {start-address address end-address address}|single ip address|subnet ip address}`

Field	Definition
none	No IP address.
range	Enter an IP address range. *start-address* - Enter the start IP address of the range. *end-address* - Enter the end IP address of the range.
single ip	Enter a single IP address.
subnet ip	Enter a subnet IP address.

Syntax: `(config-ipsec-1)# remote-subnet single ip 10.10.2.200 mask 255.255.0.0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

schedule-availability

Use the IPSec **schedule-availability** command to apply a schedule rule to this connection. To reset to the default value of "always", see *no schedule-availability* command on page 14-15.

Syntax: `(config-ipsec-{n})# schedule-availability rule-id`

Field	Definition
rule-id	Enter an existing schedule

Example: `(config-ipsec-1)# schedule-availability rule1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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session-key

Use the IPSec **session-key** command to specify the parameters needed during manual key exchange (ipsec-manual).

Syntax: `(config-ipsec-{n})# session-key {inbound|outbound} ah spi authentication [md5|sha] hex-key-data`

Field	Definition
inbound	Set the inbound (local) IPSec key.
outbound	Set the outbound (remote) IPSec key.
ah *spi*	Set the Authentication Header Security Parameter Index. 100-FFF
md5	Set authentication to MD5.
sha	Set authentication to Secure Hash Algorithm.
hex-key-data	MD5 or SHA authentication key in hex. String length must be 40.

Example: `(config-ipsec-1)# session-key outbound ah 256 authentication md5 0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f0f`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

set-pfs

Use the IPSec **set-pfs** command to enable Perfect Forward Secrecy.

Syntax: `(config-ipsec-{n})# set-pfs {1|2|5|phase1}`

Field	Definition
1	Use DH group 1 (768 bit).
2	Use DH group 2 (1024 bit).
5	Use DH group 25 (1536 bit).
phase1	Use the same settings as the Phase 1 group settings.

Example: `(config-ipsec-1)# set-pfs phase1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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transform-set

Use the IPSec **transform-set** command to set the allowable encryption methods, authentication protocols and to enable compression during automatic key exchange. To disable encryption/ authentication/compression, see *no transform-set* command on page 14-16.

Syntax: **`(config-ipsec-{`*`n`*`})# transform-set {ah-md5|ah-sha|esp-3des| esp-aes|esp-aes192|esp-aes256|esp-des|esp-md5|esp-null|esp-sha|ipcomp}`**

Field	Definition
ah-md5	Authentication Header transform using MD5 authentication. Default.
ah-sha	Authentication Header transform using Secure Hash Algorithm (SHA1) authentication. Default.
esp-aes	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 128-bit encryption.
esp-aes192	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 128-bit encryption.
esp-aes256	Encapsulating Security Payload (ESP) encryption transform using Advanced Encryption Standard (AES) 256-bit encryption.
esp-des	Encapsulating Security Payload (ESP) encryption transform using Data Encryption Standard (DES) 56-bit encryption.
esp-3des	Encapsulating Security Payload (ESP) encryption transform using Data Encryption Standard (DES) 168-bit encryption.
esp-null	Encapsulating Security Payload (ESP) encryption transform using no encryption.
esp-md5	Encapsulating Security Payload (ESP) encryption transform using Message-Digest Algorithm 5 (MD5) authentication. Default.
esp-sha	Encapsulating Security Payload (ESP) encryption transform using Secure Hash Algorithm (SHA1) authentication. Default.
ipcomp	IP Payload Compression Protocol (IPComp) compression.

Example: **`(config-ipsec-1)# transform-set esp-aes`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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Example of IPSec Connection Configuration

```
Adit 3104(config)#ipsec VPN_IPSEC 0
Adit 3104(config-ipsec-0)#dev-name VPNIPSec0
Adit 3104(config-ipsec-0)#net-type WAN
Adit 3104(config-ipsec-0)#aggressive-mode
Adit 3104(config-ipsec-0)#authentication pre-share ocho
Adit 3104(config-ipsec-0)#no encryption des
Adit 3104(config-ipsec-0)#no encryption 3des
Adit 3104(config-ipsec-0)#no encryption aes
Adit 3104(config-ipsec-0)#encryption aes192
Adit 3104(config-ipsec-0)#no encryption aes256
Adit 3104(config-ipsec-0)#group 1
Adit 3104(config-ipsec-0)#no group 2
Adit 3104(config-ipsec-0)#no group 5
Adit 3104(config-ipsec-0)#hash md5
Adit 3104(config-ipsec-0)#no hash sha
Adit 3104(config-ipsec-0)#no ipsec-manual
Adit 3104(config-ipsec-0)#lifetime time 3601
Adit 3104(config-ipsec-0)#local-subnet single ip 11.0.0.1
Adit 3104(config-ipsec-0)#remote-ip 172.15.16.2
Adit 3104(config-ipsec-0)#
Adit 3104(config-ipsec-0)#dpd-enable
Adit 3104(config-ipsec-0)#dpd-delay 70
Adit 3104(config-ipsec-0)#dpd-timeout 130
Adit 3104(config-ipsec-0)#ip route metric 11
Adit 3104(config-ipsec-0)#no ip default-route
Adit 3104(config-ipsec-0)#no ip rip
Adit 3104(config-ipsec-0)#
Adit 3104(config-ipsec-0)#remote-subnet single ip 31.0.0.1
Adit 3104(config-ipsec-0)#max-retries 4
Adit 3104(config-ipsec-0)#mode tunneling
Adit 3104(config-ipsec-0)#netbios remote-brc-addr 255.255.255.255
Adit 3104(config-ipsec-0)#reconnect
Adit 3104(config-ipsec-0)#rekey lifetime 3601 margin 539 percent 101
Adit 3104(config-ipsec-0)#no schedule-availability
Adit 3104(config-ipsec-0)#set-pfs 2
```


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```
Adit 3104(config-ipsec-0)#transform-set esp-null
Adit 3104(config-ipsec-0)#transform-set esp-des
Adit 3104(config-ipsec-0)#transform-set esp-3des
Adit 3104(config-ipsec-0)#transform-set esp-aes
Adit 3104(config-ipsec-0)#transform-set esp-aes192
Adit 3104(config-ipsec-0)#transform-set esp-aes256
Adit 3104(config-ipsec-0)#transform-set esp-md5
Adit 3104(config-ipsec-0)#transform-set esp-sha
Adit 3104(config-ipsec-0)#transform-set ah-md5
Adit 3104(config-ipsec-0)#transform-set ah-sha
Adit 3104(config-ipsec-0)#no transform-set ipcomp
Adit 3104(config-ipsec-0)#
```


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CHAPTER 15

Configuration - L2TPC Mode

The L2TPC Configuration commands allow the user to configure the VPN Layer 2 Tunneling Protocol Connection (L2TPC) parameters.

Enter this sub-group with the **(config)# l2tpc** command from the Configuration mode.

The VPN L2TPC commands are represented by the **(config-l2tpc-1)#** prompt.

L2TPC Commands

- ***do***
- ***end***
- ***exit***
- ***firewall***
- ***history***
- ***host-ip***
- ***ip address***
- ***ip default-route***
- ***ip mtu***
- ***ip ospf authentication***
- ***ip ospf authentication-key***
- ***ip ospf cost***
- ***ip ospf dead-interval***
- ***ip ospf disable***
- ***ip ospf hello-interval***
- ***ip ospf message-digest-key***
- ***ip ospf priority***
- ***ip ospf retransmit-interval***
- ***ip ospf transmit-delay***
- ***ip primary-dns***
- ***ip rip***
- ***ip route***
- ***ip route-mode***
- ***ip secondary-dns***
- ***local-secret***
- ***metric***
- ***no commands***
- ***ppp authentication***
- ***ppp encryption***
- ***ppp exec-timeout***
- ***ppp on-demand***
- ***ppp password***
- ***ppp restart-timer***
- ***ppp time-btwn-reconnect***
- ***ppp username***
- ***schedule-availability***
- ***shutdown***
- ***sip-alg***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-l2tpc-{n})# end`

Example:
```
(config-l2tpc-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-l2tpc-{n})# exit`

Example:
```
(config-l2tpc-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

firewall

Use the L2TPC **firewall** command to enable the configured firewall. To delete a preference, see *no firewall* command on page 15-13.

Syntax: `(config-l2tpc-{n})# firewall enable`

Example: `(config-l2tpc-1)# firewall enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-l2tpc-{n})# history`

Example: `(config-l2tpc-1)# history`

```
firewall enable
exit
host-ip 192.168.1.10
ip default-route enable
ip rip enable
ip rip send-version none
ip primary-dns 192.168.2.10
ip route 192.168.1.160
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

host-ip

Use the L2TPC **host-ip** command to configure the IP address for the host.

Syntax: `(config-l2tpc-{n})# host-ip {address}`

Field	Definition
address	Enter the IP address for the host.

Example: `(config-l2tpc-1)# host-ip 192.168.2.101`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip address

Use the L2TPC **ip address** command to configure the IP address for the port. To remove an IP address, see *no ip address* command on page 15-13.

Syntax: `(config-l2tpc-{n})# ip address {address mask mask|auto |unnumbered} [secondary]`

Field	Definition
address	Enter an IP address to assign to the port.
mask	Enter a subnet mask for the IP address.
auto	Uses IPCP to assign an IP address.
unnumbered	Treat this as an un-numbered interface, as per RFC 1812.
secondary	Optional parameter, defines the address to be a secondary IP address.

Example: `(config-l2tpc-1)# ip address 192.168.2.100 mask 255.255.255.0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip default-route

Use the L2TPC **ip default-route** command to enable the default route. To disable the default route, see *no ip default-route* command on page 15-14.

Syntax: `(config-l2tpc-{n})# ip default-route enable`

Example: `(config-l2tpc-1)# ip default-route enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip mtu

Use the L2TPC **ip mtu** command to set the Maximum Transmission Unit. Sets the largest packet size (bytes) the network will allow to transmit.

Syntax: `(config-l2tpc-{n})# ip mtu {size|auto}`

Field	Definition
size	Allows the user to set the Maximum Transmission Unit (MTU). **size** = Range of 576 to 1500 bytes.
auto	Auto sets the MTU at 1500 bytes.

Example: `(config-l2tpc-1)# ip mtu auto`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication

Use the L2TPC **ip ospf authentication** command to enable the authentication method (either message-digest or simple authentication) for this interface. To remove the authentication type for this interface set the parameter to null or see *no ip ospf authentication* command on page 15-14.

Note: If an optional parameter is not entered, the authentication method of **simple authentication** is applied to the interface.

Syntax: `(config-l2tpc-{n})# ip ospf authentication [message-digest|null]`

Field	Definition
message-digest	Optional parameter. Enables MD5 Authentication on the area.
null	Optional parameter. No authentication is used. **Note:** This is useful for overriding password or message-digest authentication if configured for an area.

Example: `(config-l2tpc-1)# ip ospf authentication message-digest`

Note: The authentication key must be defined before this command is implemented.

Therefore if setting **simple authentication**:

Example:
```
ip ospf authentication-key pass777
ip ospf authentication
```

Therefore if setting **message-digest**:

Example:
```
ip ospf message-digest-key 1 md5 pass777
ip ospf authentication message-digest
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication-key

Use the L2TPC **ip ospf authentication-key** command to assign a password to be used by neighboring routers, that are using OSPF's simple password authentication.To remove a previously assigned password, see *no ip ospf authentication-key* command on page 15-14.

Syntax: `(config-l2tpc-{n})# ip ospf authentication-key` *password*

Field	Definition
password	Enter a password, with up to 8 characters.

Example: `(config-l2tpc-1)# ip ospf authentication-key pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf cost

Use the L2TPC **ip ospf cost** command to define the cost of sending a packet on this serial interface. To reset the path cost to the default setting of 0, see *no ip ospf cost* command on page 15-14.

Syntax: `(config-l2tpc-{n})# ip ospf cost` *cost*

Field	Definition
cost	Range is 1-65535, with a default of 0.

Example: `(config-l2tpc-1)# ip ospf cost 5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf dead-interval

Use the L2TPC **ip ospf dead-interval** command to define the interval of time that no hello packets have been seen before neighbors declare the router down. To reset the interval of time to the default setting of 40 seconds, see *no ip ospf dead-interval* command on page 15-15.

Syntax: `(config-l2tpc-{n})# ip ospf dead-interval` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 40. **Note: This value must be the same for all nodes on the network.**

Example: `(config-l2tpc-1)# ip ospf dead-interval 50`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf disable

Use the L2TPC **ip ospf disable** command to disable OSPF processing on this interface. To enable OSPF on this interface, see *no ip ospf disable* command on page 15-15.

Syntax: `(config-l2tpc-{n})# ip ospf disable all`

Example: `(config-l2tpc-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf hello-interval

Use the L2TPC **ip ospf hello-interval** command to define the interval of time between hello packets sent on the interface. To reset the interval of time to the default setting of the path cost to the default setting of 10 seconds, see *no ip ospf hello-interval* command on page 15-15.

Syntax: `(config-l2tpc-{n})# ip ospf hello-interval` *`seconds`*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 10. **Note: This value must be the same for all nodes on the network.**

Example: `(config-l2tpc-1)# ip ospf hello-interval 12`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf message-digest-key

Use the L2TPC **ip ospf message-digest-key** command to enable OSPF MD5 (Message-Digest) authentication. To remove an old MD5 key, see *no ip ospf message-digest-key* command on page 15-16.

Syntax: `(config-l2tpc-{n})# ip ospf message-digest-key` *`key-id`* `md5` *`key`*

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.
key	Enter a alphanumeric password, with up to 8 characters.

Example: `(config-l2tpc-1)# ip ospf message-digest-key 1 md5 key1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf priority

Use the L2TPC **ip ospf priority** command to set the router priority, which determines the designated router for this network. To restore the default setting of priority 1, see *no ip ospf priority* command on page 15-16.

Syntax: `(config-l2tpc-{n})# ip ospf priority` *priority*

Field	Definition
priority	Enter an ID for this key. Range is 0-255.

Example: `(config-l2tpc-1)# ip ospf priority 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf retransmit-interval

Use the L2TPC **ip ospf retransmit-interval** command to define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface. To restore the default value of 5 seconds, see *no ip ospf retransmit-interval* command on page 15-16.

Syntax: `(config-l2tpc-{n})# ip ospf retransmit-interval` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 5.

Example: `(config-l2tpc-1)# ip ospf retransmit-interval 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf transmit-delay

Use the L2TPC **ip ospf transmit-delay** command to define the estimated time to transmit a link state update packet on the interface. To restore the default value of 1 second, see *no ip ospf transmit-delay* command on page 15-17.

Syntax: `(config-l2tpc-{n})# ip ospf transmit-delay` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 1.

Example: `(config-l2tpc-1)# ip ospf transmit-delay 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip primary-dns

Use the L2TPC **ip primary-dns** command to configure the primary DNS. To delete a primary DNS, see *no ip primary-dns* command on page 15-17.

Syntax: `(config-l2tpc-{n})# ip primary-dns` *address*

Field	Definition
address	Enter the IP address of the primary server.

Example: `(config-l2tpc-1)# ip primary-dns 192.168.2.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip

ip rip enable

Use the L2TPC **ip rip enable** command to enable RIP on this interface. To disable RIP, see *no ip rip* command on page 15-17.

Syntax: `(config-l2tpc-{n})# ip rip enable`

Example: `(config-l2tpc-1)# ip rip enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip receive-version

Use the L2TPC **ip rip receive-version** command to configure the RIP receive messages on this interface.

Syntax: `(config-l2tpc-{n})# ip rip receive-version {1|2|1or2|none}`

Field	Definition
1|2|1or2	Receive RIP version 1 Receive RIP version 2 Receive RIP version 1 and 2.
none	Set RIP version to none.

Example: `(config-l2tpc-1)# ip rip receive-version none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip rip send-version

Use the L2TPC **ip rip send-version** command to configure the send RIP messages on this interface.

Syntax: **`(config-l2tpc-{n})# ip rip send-version {1|2-bcast|2-mcast|none}`**

Field	Definition
1	Send RIP version 1.
2-bcast	Send RIP version 2 - Broadcast.
2-mcast	Send RIP version 2 - Multicast.
none	Set RIP version to none.

Example: **`(config-l2tpc-1)# ip rip send-version 2-bcast`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route

Use the L2TPC **ip route** command to configure the IP routing on this interface. To delete a route, see *no ip route* command on page 15-17.

Syntax: **`(config-l2tpc-{n})# ip route`** *`dest-ip-addr`* **`mask`** *`mask`* **`gateway`** *`gateway`* **`metric`** *`metric`*

Field	Definition
dest-ip-addr	Enter the destination IP address.
mask	Enter the mask of the above address.
gateway	Enter the gateway IP address.
metric	Metric of IP network on this interface in Adit 3500 Routing Table. Range is 0-255, with a default is 10.

Example: **`(config-l2tpc-1)# ip route 192.168.100.200 mask 255.255.255.0 gateway 192.168.100.254 mask 125`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip route-mode

Use the L2TPC **ip route-mode** command to configure the routing mode.

Syntax: `(config-l2tpc-{n})# ip route-mode {napt|route}`

Field	Definition
napt	Set to NAPT mode. Default. NAPT is used if doing private IPs on the Ethernet side or if you want to hide specific publics on the internal side.
route	Set to Route mode. Routing is used if public is visible on both sides.

Example: `(config-l2tpc-1)# ip route-mode napt`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip secondary-dns

Use the L2TPC **ip secondary-dns** command to configure the secondary DNS. To delete a secondary DNS address, see *no ip secondary-dns* command on page 15-18.

Syntax: `(config-l2tpc-{n})# ip secondary-dns address`

Field	Definition
address	Enter the IP address of the secondary Domain Name Server (DNS).

Example: `(config-l2tpc-1)# ip secondary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

local-secret

Use the L2TPC **local-secret** command to configure the local secret password on this interface.

Syntax: `(config-l2tpc-{n})# local-secret {shared-secret}`

Field	Definition
shared-secret	Enter a secret password used to authenticate L2TP connection. Maximum number of characters is 96.

Example: `(config-l2tpc-1)# local-secret secretpassword`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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metric

Use the L2TPC **metric** command to configure the Metric of the IP network on this interface.

Syntax: `(config-l2tpc-{n})# metric` *metric*

Field	Definition
metric	Range is 0-255, with a default is 10.

Example: `(config-l2tpc-1)# metric 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no commands

no firewall

Use the L2TPC **no firewall** command to disable the configured firewall. To enable the firewall, see *firewall* command on page 15-3.

Syntax: `(config-l2tpc-{n})# no firewall`

Example: `(config-l2tpc-1)# no firewall`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip address

Use the L2TPC **no ip address** command to remove the IP address assigned to the port. To set the Serial IP address, see *ip address* command on page 15-5.

Syntax: `(config-l2tpc-{n})# no ip address` *address*

Field	Definition
address	Enter the IP address to remove.

Example: `(config-l2tpc-1)# no ip address 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip default-route

Use the L2TPC **no ip default-route** command to disable the default route. To set the default IP address, see *ip default-route* command on page 15-5.

Syntax: `(config-l2tpc-{n})# no ip default-route`

Example: `(config-l2tpc-1)# no ip default-route`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication

Use the L2TPC **no ip ospf authentication** command to disable the authentication method for this serial interface. To enable the authentication type for this interface see *ip ospf authentication* command on page 15-6.

Syntax: `(config-l2tpc-{n})# no ip ospf authentication`

Example: `(config-l2tpc-1)# no ip ospf authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication-key

Use the L2TPC **no ip ospf authentication-key** command to remove a password to be used by neighboring routers, that are using OSPF's simple password authentication.To assign a password, see *ip ospf authentication-key* command on page 15-7.

Syntax: `(config-l2tpc-{n})# no ip ospf authentication-key`

Example: `(config-l2tpc-1)# no ip ospf authentication-key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf cost

Use the L2TPC **no ip ospf cost** command to reset the cost path to the default setting of 0. To define the cost of sending a packet on this serial interface, see *ip ospf cost* command on page 15-7.

Syntax: `(config-l2tpc-{n})# no ip ospf cost`

Example: `(config-l2tpc-1)# no ip ospf cost`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf dead-interval

Use the L2TPC **no ip ospf dead-interval** command to reset the interval of time to the default setting of 40 seconds. To define the interval of time that no hello packets have been seen before neighbors declare the router down, see *ip ospf dead-interval* command on page 15-7.

Syntax: `(config-l2tpc-{n})# no ip ospf dead-interval`

Example: `(config-l2tpc-1)# no ip ospf dead-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf disable

Use the L2TPC **no ip ospf disable** command to enable OSPF processing on this interface. To disable OSPF on this interface, see *ip ospf disable* command on page 15-8.

Syntax: `(config-l2tpc-{n})# ip ospf disable all`

Example: `(config-l2tpc-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf hello-interval

Use the L2TPC **no ip ospf hello-interval** command to reset the interval of time to the default setting of the path cost to the default setting of 10 seconds. To define the interval of time between hello packets sent on the interface, see *ip ospf hello-interval* command on page 15-8.

Syntax: `(config-l2tpc-{n})# no ip ospf hello-interval`

Example: `(config-l2tpc-1)# no ip ospf hello-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf message-digest-key

Use the L2TPC **no ip ospf message-digest-key** command to remove an old MD5 key. To enable OSPF MD5 (Message-Digest) authentication, see *ip ospf message-digest-key* command on page 15-8.

Syntax: `(config-l2tpc-{n})# no ip ospf message-digest-key` *key-id*

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.

Example: `(config-l2tpc-1)# no ip ospf message-digest-key 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf priority

Use the L2TPC **no ip ospf priority** command to set the router priority to the default setting of priority 1. To set the router priority, which determines the designated router for this network, see *ip ospf priority* command on page 15-9.

Syntax: `(config-l2tpc-{n})# no ip ospf priority`

Example: `(config-l2tpc-1)# no ip ospf priority`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf retransmit-interval

Use the L2TPC **ip ospf retransmit-interval** command to restore the default value of 5 seconds. To define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface, see *ip ospf retransmit-interval* command on page 15-9.

Syntax: `(config-l2tpc-{n})# no ip ospf retransmit-interval`

Example: `(config-l2tpc-1)# no ip ospf retransmit-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf transmit-delay

Use the L2TPC **no ip ospf transmit-delay** command to restore the default value of 1 second. To define the estimated time to transmit a link state update packet on the interface, see *ip ospf transmit-delay* command on page 15-9.

Syntax: `(config-l2tpc-{n})# no ip ospf transmit-delay`

Example: `(config-l2tpc-1)# no ip ospf transmit-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip primary-dns

Use the L2TPC **no primary-dns** command to disable the primary DNS. To set the DNS primary IP address, see *ip primary-dns* command on page 15-10.

Syntax: `(config-l2tpc-{n})# no ip primary-dns`

Example: `(config-l2tpc-1)# no ip primary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the L2TPC **no ip rip** command to disable RIP on this interface. To enable RIP, see *ip rip* command on page 15-10.

Syntax: `(config-l2tpc-{n})# no ip rip`

Example: `(config-l2tpc-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip route

Use the L2TPC **no ip route** command remove an IP route. To add a route, see *ip route* command on page 15-11.

Syntax: `(config-l2tpc-{n})# no ip route` *`dest-ip-addr gateway`*

Field	Definition
dest-ip-addr	Enter destination IP address to remove.
gateway	Enter gateway IP address to remove.

Example: `(config-l2tpc-1)# no ip route 192.168.100.200 192.168.100.254`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip secondary-dns

Use the L2TPC **no secondary-dns** command to disable the secondary DNS. To enable the secondary DNS, see *ip secondary-dns* command on page 15-12.

Syntax: `(config-l2tpc-{n})# no ip secondary-dns`

Example: `(config-l2tpc-1)# no ip secondary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp authentication

Use the L2TPC **no ppp authentication** command disable PPP authentication. To enable PPP authentication, see *ppp authentication* command on page 15-21.

Syntax: `(config-l2tpc-{n})# no ppp authentication`

Example: `(config-l2tpc-1)# no ppp authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp encryption

Use the L2TPC **no ppp encryption** command to disable PPP encryption. To enable PPP encryption, see *ppp encryption* command on page 15-21.

Syntax: `(config-l2tpc-{n})# no ppp encryption`

Example: `(config-l2tpc-1)# no ppp encryption`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp exec-timeout

Use the L2TPC **no ppp exec-timeout** command to disable PPP idle time. To set the PPP maximum idle time before hangup, see *ppp exec-timeout* command on page 15-21.

Syntax: `(config-l2tpc-{n})# no ppp exec-timeout`

Example: `(config-l2tpc-1)# no ppp exec-timeout`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp on-demand

Use the L2TPC **no ppp on-demand** command to disable PPP on-demand. To enable PPP on demand, see *ppp on-demand* command on page 15-22.

Syntax: `(config-l2tpc-{n})# no ppp on-demand`

Example: `(config-l2tpc-1)# no ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp password

Use the L2TPC **no ppp password** command to remove the PPP password. To set the PPP password, see *ppp password* command on page 15-22.

Syntax: `(config-l2tpc-{n})# no ppp password`

Example: `(config-l2tpc-1)# no ppp password`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp restart-timer

Use the L2TPC **no ppp restart-timer** command to set the restart timer back to the default setting. To set the restart timer, see *ppp restart-timer* command on page 15-22.

Syntax: `(config-l2tpc-{n})# no ppp restart-timer`

Example: `(config-l2tpc-1)# no ppp restart-timer`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp time-btwn-reconnect

Use the L2TPC **no ppp time-btwn-reconnect** command to reset this time to the default settings. To set the interval between reconnect attempts, see *ppp time-btwn-reconnect* command on page 15-23.

Syntax: `(config-l2tpc-{n})# no ppp time-btwn-reconnect`

Example: `(config-l2tpc-1)# no ppp time-btwn-reconnect`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp username

Use the L2TPC **no ppp username** command remove the PPP username. To set a PPP user, see *ppp username* command on page 15-23.

Syntax: `(config-l2tpc-{n})# no ppp username` *username*

Example: `(config-l2tpc-1)# no ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no schedule-availability

Use the L2TPC **no schedule-availability** command to disable a schedule rule. To add a rule, see *schedule-availability* command on page 15-23.

Syntax: `(config-l2tpc-{n})# no schedule-availability`

Example: `(config-l2tpc-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no shutdown

Use the L2TPC **no shutdown** command to set the interface up (In-Service). To set the interface down (Out-of-Service), see *shutdown* command on page 15-24.

Syntax: `(config-l2tpc-{n})# no shutdown`

Example: `(config-l2tpc-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no sip-alg

Use the L2TPC **no sip-alg** command to disable SIP ALG on this interface. To enable SIP ALG, see *sip-alg* command on page 15-24.

Syntax: `(config-l2tpc-{n})# no sip-alg`

Example: `(config-l2tpc-1)# no sip-alg`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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ppp authentication

Use the L2TPC **ppp authentication** command to configure the support of authentication types for the password. To disable PPP authentication, see *no ppp authentication* command on page 15-18.

Syntax: `(config-l2tpc-{n})# ppp authentication {chap|ms-chap| ms-chapv2|pap}`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chap	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password.

Example: `(config-l2tpc-1)# ppp authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp encryption

Use the L2TPC **ppp encryption** command to configure the PPP encryption. To disable PPP encryption, see *no ppp encryption* command on page 15-18.

Syntax: `(config-l2tpc-{n})# ppp encryption {40-bit|128-bit}`

Field	Definition
40-bit	Support Encryption (40 bit keys)
128-bit	Support Maximum Strength Encryption (128 bit keys)

Example: `(config-l2tpc-1)# ppp encryption 40-bit`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp exec-timeout

Use the L2TPC **ppp exec-timeout** command to set the PPP maximum idle time before hangup.To disable PPP idle time, see *no ppp exec-timeout* command on page 15-18.

Syntax: `(config-l2tpc-{n})# ppp exec-timeout` *minutes*

Field	Definition
minutes	Range is 0 - 99999 minutes.

Example: `(config-l2tpc-1)# ppp exec-timeout 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp on-demand

Use the L2TPC **ppp on-demand** command to enable on demand the feature. On demand attempts to connect only when packets are sent. To disable PPP on demand, see *no ppp encryption* command on page 15-18.

Syntax: `(config-l2tpc-{n})# ppp on-demand`

Example: `(config-l2tpc-1)# ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp password

Use the L2TPC **ppp password** command set the PPP password. To delete a PPP password, see *no ppp password* command on page 15-19.

Syntax: `(config-l2tpc-{n})# ppp password password`

Field	Definition
password	Enter the PPP password, with a maximum of 19 characters.

Example: `(config-l2tpc-1)# ppp password test-user-pswrd`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp restart-timer

Use the L2TPC **ppp restart-timer** command to configure the PPP restart timer. To set the restart timer to the default setting, see *no ppp restart-timer* command on page 15-19.

Syntax: `(config-l2tpc-{n})# ppp restart-timer seconds`

Field	Definition
seconds	Range is 1 - 65535 seconds. Default is 3 seconds.

Example: `(config-l2tpc-1)# ppp restart-timer 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp time-btwn-reconnect

Use the L2TPC **ppp time-btwn-reconnect** command configure the time between reconnect attempts. To reset to default value, see *no ppp time-btwn-reconnect* command on page 15-19.

Syntax: `(config-l2tpc-{n})# ppp time-btwn-reconnect` *seconds*

Field	Definition
seconds	Set the interval of time between reconnect attempts. Range is 0 - 99999 seconds with a default of 0.

Example: `(config-l2tpc-1)# ppp time-btwn-reconnect 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp username

Use the L2TPC **ppp username** command set the PPP Login User Name. To delete a PPP user, see *no ppp username* command on page 15-20.

Syntax: `(config-l2tpc-{n})# ppp username` *username*

Field	Definition
username	Enter the Username, with a maximum of 19 characters.

Example: `(config-l2tpc-1)# ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

schedule-availability

Use the L2TPC **schedule-availability** command to apply a schedule rule to this interface. To delete a schedule, see *no schedule-availability* command on page 15-20.

Syntax: `(config-l2tpc-{n})# schedule-availability time-range` *schedule-id*

Field	Definition
schedule-id	Enter an existing schedule rule name. See *time-range* command on page 4-62 to set the schedule-id

Example: `(config-l2tpc-1)# schedule-availability time-range 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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shutdown

Use the L2TPC **shutdown** command to disable the interface. To set the interface up (In-Service), see *no shutdown* command on page 15-20.

Syntax: `(config-l2tpc-{n})# shutdown`

Example: `(config-l2tpc-1)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

sip-alg

Use the L2TPC **sip-alg** command to enable SIP ALG. To disable SIP ALG, see *no sip-alg* command on page 15-20.

Syntax: `(config-l2tpc-{n})# sip-alg enable`

Example: `(config-l2tpc-1)# sip-alg enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 16

Configuration - OSPF Mode

The Router OSPF Configuration commands allow the user to configure the OSPF parameters.

OSPF (Open Shortest Path First) is a protocol based on the link-states of routers within a network. OSPF supports hierarchical routing by segmenting a larger network into smaller more manageable networks called areas.

Enter this sub-group with the **(config)# router ospf** command from the Configuration mode.

The Router OSPF commands are represented by the **(config-ospf)#** prompt.

Router OSPF Commands

- ***area authentication***
- ***area stub***
- ***compatible rfc1583***
- ***do***
- ***end***
- ***exit***
- ***history***
- ***network area***
- ***no commands***
- ***router-id***

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area commands

Note: For the following **area** commands, the first command that enters the area ID will set this parameter. The **no area** command will remove a specific area from the configuration. See the *no area* command on page 16-7.

area authentication

Use the Router OSPF **area authentication** command to enable authentication method (either message-digest or simple authentication) for an OSPF area. The default setting is **no** authentication. **Note:** If the optional parameter (message-digest) is not entered, the authentication method of **simple authentication** is applied to the area. To remove an area's authentication see *no area authentication* command on page 16-7.

Syntax: **`(config-ospf)# area`** *`area-id`* **`authentication [message-digest]`**

Field	Definition
area-id	Identifier of the area for which authentication is to be enabled, in the form: **area number** - Range 0-4294967295 **area IP address** - IP address of the area.
message-digest	Optional parameter. Enables MD5 Authentication on the area.

Example: **`(config-ospf)# area 1 authentication`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

area stub

Use the Router OSPF **area stub** command to set an area as a Stub area. **Note:** A Stub area is an area that does not receive LSAs. To remove the "stub" destination of an area, see *no area stub* command on page 16-7.

Syntax: **`(config-ospf)# area`** *`area-id`* **`stub`**

Field	Definition
area-id	Identifier of the stub area, in the form: **ID number** - Range 0-4294967295 **IP address** - IP address of the area.

Example: **`(config-ospf)# area 1 stub`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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compatible rfc1583

Use the Router OSPF **compatible rfc1583** command to restore the method used to calculate summary route costs per RFC 1583. To disable RFC 1583 compatibility, see the *no compatible rfc1583* command on page 16-8.

Syntax: `(config-ospf)# compatible rfc1583`

Example: `(config-ospf)# compatible rfc1583`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-ospf)# end`

Example:
```
(config-ospf)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-ospf)# exit`

Example:
```
(config-ospf)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-ospf)# history`

Example:
```
(config-ospf)# history
router-id 10.1.1.1
history
compatible rfc1583
area 1 authentication
area 1 stub
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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network area

Use the Router OSPF **network area** command to define the interfaces on which OSPF will run and set the ID for those interfaces. To disable OSPF routing for the interface defined, see *no network area* command on page 16-8.

Syntax: `(config-ospf)# network address wildcard-mask area area-id`

Field	Definition
address	IP address
wildcard-mask	IP address-type mask that includes "don't care" bits.
area-id	Identifier of the stub area, in the form: **ID number** - Range 0-4294967295 **IP address** - IP address of the area. If you intend to associate areas with IP subnets, specify a subnet address as the value of the *area-id*.

Example: `(config-ospf)# network 192.168.1.1 0.0.0.255 area 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no area

Use the Router OSPF **no area** command to remove a specific area from the OSPF configuration. To set an area, see the *area commands* command on page 16-2, or *area stub* command on page 16-2, the first use of either command will set the area.

Syntax: `(config-ospf)# no area area-id`

Field	Definition
area-id	ID of area to be removed, in the form: **area number** - Range 0-4294967295 **area IP address** - IP address of the area.

Example: `(config-ospf)# no area 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no area authentication

Use the Router OSPF **no area authentication** command to remove an area's authentication. See the *area commands* command on page 16-2 for the counterpart of this command.

Syntax: `(config-ospf)# no area area-id authentication`

Field	Definition
area-id	Area ID for which authentication is to be removed, in the form: **area number** - Range 0-4294967295 **area IP address** - IP address of the area.

Example: `(config-ospf)# no area 1 authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no area stub

Use the Router OSPF **no area stub** command to remove the definition of an area as a Stub area. See the *area stub* command on page 16-2 for the counterpart of this command.

Syntax: `(config-ospf)# no area area-id stub`

Field	Definition
area-id	Identifier of the stub area, in the form: **ID number** - Range 0-4294967295 **IP address** - IP address of the area.

Example: `(config-ospf)# no area 1 stub`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no compatible rfc1583

Use the Router OSPF **no compatible rfc1583** command to disable RFC 1583 compatibility. To restore RFC 1583 compatibility, see *compatible rfc1583* command on page 16-3

Syntax: `(config-ospf)# no compatible rfc1583`

Example: `(config-ospf)# no compatible rfc1583`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no network area

Use the Router OSPF **no network area** command to disable OSPF routing for the interface defined. To define the interfaces on which OSPF will run and set the ID for those interfaces, see *network area* command on page 16-6.

Syntax: `(config-ospf)# no network` *`address wildcard-mask`* `area` *`area-id`*

Field	Definition
address	IP address
wildcard-mask	Wildcard mask to remove.
area-id	Identifier of the stub area, in the form: **ID number** - Range 0-4294967295 **IP address** - IP address of the area.

Example: `(config-ospf)# no network 192.168.1.1 0.0.0.255 area 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no router-id

Use the Router OSPF **no router-id** command to force OSPF to use the previous OSPF router ID behavior. To use a fixed router ID, see *router-id* command on page 16-9.

Syntax: `(config-ospf)# no router-id`

Example: `(router-ospf)# no router-id`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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router-id

Use the Router OSPF **router-id** command to use a fixed router ID. To force OSPF to use the previous OSPF router ID behavior use the no form of this command, see *no router-id* command on page 16-8.

Syntax: `(config-ospf)# router-id` *address*

Field	Definition
address	Router ID in IP address format.

Example: `(router-ospf)# router-id 10.1.1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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Sample Configuration

```
ospf
    router ospf
    no compatible rfc1583
    router-id 192.168.3.251
    network 192.168.3.0 0.0.0.255 area 0.0.0.1
interface ethernet 1
    ip address 192.168.2.251 mask 255.255.255.0
    description Ethernet 1
    ip mtu auto
    no tos ip
    tos ip value 0x0
    ip default-gateway 0.0.0.0
    no ip dhcp auto-provision
    no ip primary-dns
    no ip secondary-dns
    ip route-mode route
    no ip default-route
    no ip proxy-arp
    no ip rip
    ip rip receive-version 1or2
    ip rip send-version 2-bcast
    no firewall
    metric 50
    no shutdown
    speed auto
    full-duplex
    remote-admin enable
    no schedule-availability
    ip ospf message-digest-key 1 md5 test
    ip ospf authentication-key test2
    ip ospf cost 2
```


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```
    ip ospf priority 2
    exit
interface ethernet 2
    ip address 192.168.3.251 mask 255.255.255.0
    description Ethernet 2
    ip mtu auto
    ip default-gateway 192.168.3.1
    ip dhcp auto-provision
    no ip primary-dns
    no ip secondary-dns
    ip route-mode route
    ip default-route enable
    no ip proxy-arp
    no ip rip
    ip rip receive-version 1or2
    ip rip send-version 2-bcast
    sip-alg enable
    no firewall
    metric 40
    no shutdown
    speed auto
    full-duplex
    no schedule-availability
    ip ospf message-digest-key 1 md5 123 (test)
    ip ospf authentication-key (test2)
    ip ospf cost 2
    ip ospf hello-interval 25
    exit
```


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CHAPTER 17

Configuration - PPTPC Mode

The PPTPC Configuration commands allow the user to configure the VPN (Virtual Private Network) Point-to-Point Tunneling Protocol Client parameters.

Enter this sub-group with the **(config)# pptpc** command from the Configuration mode.

The VPN PPTPC commands are represented by the **(config-pptpc-*n*)#** prompt.

PPTP Client Commands

- ***do***
- ***end***
- ***exit***
- ***firewall***
- ***history***
- ***host-ip***
- ***ip address***
- ***ip default-route***
- ***ip mtu***
- ***ip ospf authentication***
- ***ip ospf authentication-key***
- ***ip ospf cost***
- ***ip ospf dead-interval***
- ***ip ospf disable***
- ***ip ospf hello-interval***
- ***ip ospf message-digest-key***
- ***ip ospf priority***
- ***ip ospf retransmit-interval***
- ***ip ospf transmit-delay***
- ***ip primary-dns***
- ***ip rip***
- ***ip route***
- ***ip route-mode***
- ***ip secondary-dns***
- ***metric***
- ***no commands***
- ***ppp authentication***
- ***ppp encryption***
- ***ppp exec-timeout***
- ***ppp on-demand***
- ***ppp password***
- ***ppp restart-timer***
- ***ppp time-btwn-reconnect***
- ***ppp username***
- ***schedule-availability***
- ***shutdown***
- ***sip-alg***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-pptpc-{n})# end`

Example:
```
(config-pptpc-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-pptpc-{n})# exit`

Example:
```
(config-pptpc-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

firewall

Use the PPTP Client **firewall** command to enable the configured firewall. To delete a preference, see *no firewall* command on page 17-13.

Syntax: `(config-pptpc-{n})# firewall enable`

Example: `(config-pptpc-1)# firewall enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-pptpc-{n})# history`

Example: `(config-pptpc-1)# history`

```
history
ip mtu aut
ip rip enable
ip rip receive-version 1or2
ip route-mode route
metric 3
ppp exec-timeout 1500
ppp restart-timer 600
ppp authentication chap
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

host-ip

Use the PPTP Client **host-ip** command to configure the IP address for the host.

Syntax: `(config-pptpc-{n})# host-ip {`*address*`}`

Field	Definition
address	Enter the IP address for the host.

Example: `(config-pptpc-1)# host-ip 192.168.2.101`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip address

Use the PPTP Client **ip address** command to configure the IP address for the port. To remove an IP address, see *no ip address* command on page 17-13.

Syntax: **(config-pptpc-{n})# ip address {***address* **mask** *mask*|**auto |unnumbered} [secondary]**

Field	Definition
address	Enter an IP address to assign to the port.
mask	Enter a subnet mask for the IP address.
auto	Uses IPCP to assign an IP address.
unnumbered	Treat this as an un-numbered interface, as per RFC 1812.
secondary	Optional parameter, defines the address to be a secondary IP address.

Example: **(config-pptpc-1)# ip address 192.168.2.100 mask 255.255.255.0**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip default-route

Use the PPTP Client **ip default-route** command to enable the default route. To disable the default route, see *no ip default-route* command on page 17-13.

Syntax: **(config-pptpc-{n})# ip default-route enable**

Example: **(config-pptpc-1)# ip default-route enable**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip mtu

Use the PPTP Client **ip mtu** command to set the Maximum Transmission Unit. Sets the largest packet size (bytes) the network will allow to transmit.

Syntax: **(config-pptpc-{n})# ip mtu {***size*|**auto}**

Field	Definition
size	Allows the user to set the Maximum Transmission Unit (MTU). **size** = Range of 576 to 1500 bytes.
auto	Auto sets the MTU at 1500 bytes.

Example: **(config-pptpc-1)# ip mtu auto**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication

Use the PPTP Client **ip ospf authentication** command to enable the authentication method (either message-digest or simple authentication) for this interface. To remove the authentication type for this interface set the parameter to null or see *no ip ospf authentication* command on page 17-13.

Note: If an optional parameter is not entered, the authentication method of **simple authentication** is applied to the interface.

Syntax: `(config-pptpc-{n})# ip ospf authentication [message-digest|null]`

Field	Definition
message-digest	Optional parameter. Enables MD5 Authentication on the area.
null	Optional parameter. No authentication is used. **Note:** This is useful for overriding password or message-digest authentication if configured for an area.

Example: `(config-pptpc-1)# ip ospf authentication message-digest`

Note: The authentication key must be defined before this command is implemented.

Therefore if setting **simple authentication**:

Example:
```
ip ospf authentication-key pass777
ip ospf authentication
```

Therefore if setting **message-digest**:

Example:
```
ip ospf message-digest-key 1 md5 pass777
ip ospf authentication message-digest
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf authentication-key

Use the PPTP Client **ip ospf authentication-key** command to assign a password to be used by neighboring routers, that are using OSPF's simple password authentication.To remove a previously assigned password, see *no ip ospf authentication-key* command on page 17-14.

Syntax: `(config-pptpc-{n})# ip ospf authentication-key` *password*

Field	Definition
password	Enter a password, with up to 8 characters.

Example: `(config-pptpc-1)# ip ospf authentication-key pass777`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf cost

Use the PPTP Client **ip ospf cost** command to define the cost of sending a packet on this serial interface. To reset the path cost to the default setting of 0, see *no ip ospf cost* command on page 17-14.

Syntax: `(config-pptpc-{n})# ip ospf cost` *cost*

Field	Definition
cost	Range is 1-65535, with a default of 0.

Example: `(config-pptpc-1)# ip ospf cost 5`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf dead-interval

Use the PPTP Client **ip ospf dead-interval** command to define the interval of time that no hello packets have been seen before neighbors declare the router down. To reset the interval of time to the default setting of 40 seconds, see *no ip ospf dead-interval* command on page 17-14.

Syntax: `(config-pptpc-{n})# ip ospf dead-interval` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 40. **Note: This value must be the same for all nodes on the network.**

Example: `(config-pptpc-1)# ip ospf dead-interval 50`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf disable

Use the PPTP Client **ip ospf disable** command to disable OSPF processing on this interface. To enable OSPF on this interface, see *no ip ospf disable* command on page 17-14.

Syntax: `(config-pptpc-{n})# ip ospf disable all`

Example: `(config-pptpc-1)# ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf hello-interval

Use the PPTP Client **ip ospf hello-interval** command to define the interval of time between hello packets sent on the interface. To reset the interval of time to the default setting of the path cost to the default setting of 10 seconds, see *no ip ospf hello-interval* command on page 17-15.

Syntax: `(config-pptpc-{n})# ip ospf hello-interval` *`seconds`*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 10. **Note: This value must be the same for all nodes on the network.**

Example: `(config-pptpc-1)# ip ospf hello-interval 12`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf message-digest-key

Use the PPTP Client **ip ospf message-digest-key** command to enable OSPF MD5 (Message-Digest) authentication. To remove an old MD5 key, see *no ip ospf message-digest-key* command on page 17-15.

Syntax: `(config-pptpc-{n})# ip ospf message-digest-key` *`key-id`* `md5` *`key`*

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.
key	Enter a alphanumeric password, with up to 8 characters.

Example: `(config-pptpc-1)# ip ospf message-digest-key 1 md5 key1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip ospf priority

Use the PPTP Client **ip ospf priority** command to set the router priority, which determines the designated router for this network. To restore the default setting of priority 1, see *no ip ospf priority* command on page 17-15.

Syntax: `(config-pptpc-{n})# ip ospf priority` *priority*

Field	Definition
priority	Enter an ID for this key. Range is 0-255.

Example: `(config-pptpc-1)# ip ospf priority 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf retransmit-interval

Use the PPTP Client **ip ospf retransmit-interval** command to define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface. To restore the default value of 5 seconds, see *no ip ospf retransmit-interval* command on page 17-16.

Syntax: `(config-pptpc-{n})# ip ospf retransmit-interval` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 5.

Example: `(config-pptpc-1)# ip ospf retransmit-interval 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip ospf transmit-delay

Use the PPTP Client **ip ospf transmit-delay** command to define the estimated time to transmit a link state update packet on the interface. To restore the default value of 1 second, see *no ip ospf transmit-delay* command on page 17-16.

Syntax: `(config-pptpc-{n})# ip ospf transmit-delay` *seconds*

Field	Definition
seconds	Range is 1-65535 seconds, with a default of 1.

Example: `(config-pptpc-1)# ip ospf transmit-delay 10`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip primary-dns

Use the PPTP Client **ip primary-dns** command to configure the primary DNS. To delete a primary DNS, see *no ip primary-dns* command on page 17-16.

Syntax: `(config-pptpc-{n})# ip primary-dns` *address*

Field	Definition
address	Enter the IP address of the primary server.

Example: `(config-pptpc-1)# ip primary-dns 192.168.2.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip

ip rip enable

Use the PPTP Client **ip rip enable** command to enable RIP on this interface. To disable RIP, see *no ip rip* command on page 17-16.

Syntax: `(config-pptpc-{n})# ip rip enable`

Example: `(config-pptpc-1)# ip rip enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip rip receive-version

Use the PPTP Client **ip rip receive-version** command to configure the RIP receive messages on this interface.

Syntax: `(config-pptpc-{n})# ip rip receive-version {1|2|1or2|none}`

Field	Definition
1|2|1or2	Receive RIP version 1 Receive RIP version 2 Receive RIP version 1 and 2.
none	Set RIP version to none.

Example: `(config-pptpc-1)# ip rip receive-version none`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip rip send-version

Use the PPTP Client **ip rip send-version** command to configure the send RIP messages on this interface.

Syntax: **(config-pptpc-{n})# ip rip send-version {1|2-bcast|2-mcast|none}**

Field	Definition
1	Send RIP version 1.
2-bcast	Send RIP version 2 - Broadcast.
2-mcast	Send RIP version 2 - Multicast.
none	Set RIP version to none.

Example: **(config-pptpc-1)# ip rip send-version 2-bcast**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip route

Use the PPTP Client **ip route** command to configure the IP routing on this interface. To delete a route, see *no ip route* command on page 17-17.

Syntax: **(config-pptpc-{n})# ip route** *dest-ip-addr* **mask** *mask* **gateway** *gateway* **metric** *metric*

Field	Definition
dest-ip-addr	Enter the destination IP address.
mask	Enter the mask of the above address.
gateway	Enter the gateway IP address.
metric	Metric of IP network on this interface in Adit 3500 Routing Table. Range is 0-255, with a default is 10.

Example: **(config-pptpc-1)# ip route 192.168.100.200 mask 255.255.255.0 gateway 192.168.100.254 mask 125**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ip route-mode

Use the PPTP Client **ip route-mode** command to configure the routing mode.

Syntax: `(config-pptpc-{n})# ip route-mode {napt|route}`

Field	Definition
napt	Set to NAPT mode. Default. NAPT is used if doing private IPs on the Ethernet side or if you want to hide specific publics on the internal side.
route	Set to Route mode. Routing is used if public is visible on both sides.

Example: `(config-pptpc-1)# ip route-mode napt`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ip secondary-dns

Use the PPTP Client **ip secondary-dns** command to configure the secondary DNS. To delete a secondary DNS address, see *no ip secondary-dns* command on page 17-17.

Syntax: `(config-pptpc-{n})# ip secondary-dns` *address*

Field	Definition
address	Enter the IP address of the secondary Domain Name Server (DNS).

Example: `(config-pptpc-1)# ip secondary-dns 192.168.1.200`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

metric

Use the PPTP Client **metric** command to configure the Metric of the IP network on this interface.

Syntax: `(config-pptpc-{n})# metric` *metric*

Field	Definition
metric	Range is 0-255, with a default is 10.

Example: `(config-pptpc-1)# metric 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no firewall

Use the PPTP Client **no firewall** command to disable the configured firewall. To enable the firewall, see *firewall* command on page 17-3.

Syntax: `(config-pptpc-{n})# no firewall`

Example: `(config-pptpc-1)# no firewall`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip address

Use the PPTP Client **no ip address** command to remove the IP address assigned to the port. To set the Serial IP address, see *ip address* command on page 17-5.

Syntax: `(config-pptpc-{n})# no ip address` *address*

Field	Definition
address	Enter the IP address to remove.

Example: `(config-pptpc-1)# no ip address 192.168.1.100`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip default-route

Use the PPTP Client **no ip default-route** command to disable the default route. To set the default IP address, see *ip default-route* command on page 17-5.

Syntax: `(config-pptpc-{n})# no ip default-route`

Example: `(config-pptpc-1)# no ip default-route`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf authentication

Use the PPTP Client **no ip ospf authentication** command to disable the authentication method for this serial interface. To enable the authentication type for this interface see *ip ospf authentication* command on page 17-6.

Syntax: `(config-pptpc-{n})# no ip ospf authentication`

Example: `(config-pptpc-1)# no ip ospf authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf authentication-key

Use the PPTP Client **no ip ospf authentication-key** command to remove a password to be used by neighboring routers, that are using OSPF's simple password authentication.To assign a password, see *ip ospf authentication-key* command on page 17-7.

Syntax: `(config-pptpc-{n})# no ip ospf authentication-key`

Example: `(config-pptpc-1)# no ip ospf authentication-key`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf cost

Use the PPTP Client **no ip ospf cost** command to reset the cost path to the default setting of 0. To define the cost of sending a packet on this serial interface, see *ip ospf cost* command on page 17-7.

Syntax: `(config-pptpc-{n})# no ip ospf cost`

Example: `(config-pptpc-1)# no ip ospf cost`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf dead-interval

Use the PPTP Client **no ip ospf dead-interval** command to reset the interval of time to the default setting of 40 seconds. To define the interval of time that no hello packets have been seen before neighbors declare the router down, see *ip ospf dead-interval* command on page 17-7.

Syntax: `(config-pptpc-{n})# no ip ospf dead-interval`

Example: `(config-pptpc-1)# no ip ospf dead-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf disable

Use the PPTP Client **no ip ospf disable** command to enable OSPF processing on this interface. To disable OSPF on this interface, see *ip ospf disable* command on page 17-8.

Syntax: `(config-pptpc-{n})# no ip ospf disable all`

Example: `(config-pptpc-1)# no ip ospf disable all`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf hello-interval

Use the PPTP Client **no ip ospf hello-interval** command to reset the interval of time to the default setting of the path cost to the default setting of 10 seconds. To define the interval of time between hello packets sent on the interface, see *ip ospf hello-interval* command on page 17-8.

Syntax: `(config-pptpc-{n})# no ip ospf hello-interval`

Example: `(config-pptpc-1)# no ip ospf hello-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf message-digest-key

Use the PPTP Client **no ip ospf message-digest-key** command to remove an old MD5 key. To enable OSPF MD5 (Message-Digest) authentication, see *ip ospf message-digest-key* command on page 17-8.

Syntax: `(config-pptpc-{n})# no ip ospf message-digest-key` *`key-id`*

Field	Definition
key-id	Enter an ID for this key. Range is 1-255.

Example: `(config-pptpc-1)# no ip ospf message-digest-key 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf priority

Use the PPTP Client **no ip ospf priority** command to set the router priority to the default setting of priority 1. To set the router priority, which determines the designated router for this network, see *ip ospf priority* command on page 17-9.

Syntax: `(config-pptpc-{n})# no ip ospf priority`

Example: `(config-pptpc-1)# no ip ospf priority`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip ospf retransmit-interval

Use the PPTP Client **ip ospf retransmit-interval** command to restore the default value of 5 seconds. To define the interval of time between link state advertisement retransmissions for adjacencies belonging to the interface, see *ip ospf retransmit-interval* command on page 17-9.

Syntax: `(config-pptpc-{n})# no ip ospf retransmit-interval`

Example: `(config-pptpc-1)# no ip ospf retransmit-interval`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip ospf transmit-delay

Use the PPTP Client **no ip ospf transmit-delay** command to restore the default value of 1 second. To define the estimated time to transmit a link state update packet on the interface, see *ip ospf transmit-delay* command on page 17-9.

Syntax: `(config-pptpc-{n})# no ip ospf transmit-delay`

Example: `(config-pptpc-1)# no ip ospf transmit-delay`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip primary-dns

Use the PPTP Client **no primary-dns** command to disable the primary DNS. To set the DNS primary IP address, see *ip primary-dns* command on page 17-10.

Syntax: `(config-pptpc-{n})# no ip primary-dns`

Example: `(config-pptpc-1)# no ip primary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip rip

Use the PPTP Client **no ip rip** command to disable RIP on this interface. To enable RIP, see *ip rip* command on page 17-10.

Syntax: `(config-pptpc-{n})# no ip rip`

Example: `(config-pptpc-1)# no ip rip`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ip route

Use the PPTP Client **no ip route** command remove an IP route. To add a route, see *ip route* command on page 17-11.

Syntax: `(config-pptpc-{n})# no ip route` *dest-ip-addr gateway*

Field	Definition
dest-ip-addr	Enter destination IP address to remove.
gateway	Enter gateway IP address to remove.

Example: `(config-pptpc-1)# no ip route 192.168.100.200  192.168.100.254`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ip secondary-dns

Use the PPTP Client **no secondary-dns** command to disable the secondary DNS. To enable the secondary DNS, see *ip secondary-dns* command on page 17-12.

Syntax: `(config-pptpc-{n})# no ip secondary-dns`

Example: `(config-pptpc-1)# no ip secondary-dns`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp authentication

Use the PPTP Client **no ppp authentication** command disable PPP authentication. To enable PPP authentication, see *ppp authentication* command on page 17-20.

Syntax: `(config-pptpc-{n})# no ppp authentication`

Example: `(config-pptpc-1)# no ppp authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp encryption

Use the PPTP Client **no ppp encryption** command to disable PPP encryption. To enable PPP encryption, see *ppp encryption* command on page 17-20.

Syntax: `(config-pptpc-{n})# no ppp encryption`

Example: `(config-pptpc-1)# no ppp encryption`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp exec-timeout

Use the PPTP Client **no ppp exec-timeout** command to disable PPP idle time. To set the PPP maximum idle time before hangup, see *ppp exec-timeout* command on page 17-21.

Syntax: `(config-pptpc-{n})# no ppp exec-timeout`

Example: `(config-pptpc-1)# no ppp exec-timeout`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp on-demand

Use the PPTP Client **no ppp on-demand** command to disable PPP on-demand. To enable PPP on demand, see *ppp on-demand* command on page 17-21.

Syntax: `(config-pptpc-{n})# no ppp on-demand`

Example: `(config-pptpc-1)# no ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp password

Use the PPTP Client **no ppp password** command to remove the PPP password. To set the PPP password, see *ppp password* command on page 17-21.

Syntax: `(config-pptpc-{n})# no ppp password`

Example: `(config-pptpc-1)# no ppp password`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp restart-timer

Use the PPTP Client **no ppp restart-timer** command to set the PPP restart timer to the default setting. To configure the PPP restart timer, see *ppp restart-timer* command on page 17-22.

Syntax: `(config-pptpc-{n})# no ppp restart-timer`

Example: `(config-pptpc-1)# no ppp restart-timer`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no ppp time-btwn-reconnect

Use the PPTP Client **no ppp time-btwn-reconnect** command to set the time between reconnect attempts to the default setting. To configure the time between reconnect attempts, see *ppp time-btwn-reconnect* command on page 17-22.

Syntax: `(config-pptpc-{n})# no ppp time-btwn-reconnect`

Example: `(config-pptpc-1)# no ppp time-btwn-reconnect`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp username

Use the PPTP Client **no ppp username** command remove the PPP username. To set a PPP user, see *ppp username* command on page 17-22.

Syntax: `(config-pptpc-{n})# no ppp username` *username*

Example: `(config-pptpc-1)# no ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no schedule-availability

Use the PPTP Client **no schedule-availability** command to disable a schedule rule. To add a rule, see *schedule-availability* command on page 17-23.

Syntax: `(config-pptpc-{n})# no schedule-availability`

Example: `(config-pptpc-1)# no schedule-availability`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no shutdown

Use the PPTP Client **no shutdown** command to set the interface up (In-Service). To set the interface down (Out-of-Service), see *shutdown* command on page 17-23.

Syntax: `(config-pptpc-{n})# no shutdown`

Example: `(config-pptpc-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no sip-alg

Use the PPTP Client **no sip-alg** command to disable SIP ALG on this interface. To enable SIP ALG, see *sip-alg* command on page 17-23.

Syntax: `(config-pptpc-{n})# no sip-alg`

Example: `(config-pptpc-1)# no sip-alg`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

ppp authentication

Use the PPTP Client **ppp authentication** command to configure the support of authentication types for the password. To disable PPP authentication, see *no ppp authentication* command on page 17-17.

Syntax: `(config-pptpc-{n})# ppp authentication {chap|ms-chap| ms-chapv2|pap}`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chap	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password.

Example: `(config-pptpc-1)# ppp authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp encryption

Use the PPTP Client **ppp encryption** command to configure the PPP encryption. To disable PPP encryption, see *no ppp encryption* command on page 17-17.

Syntax: `(config-pptpc-{n})# ppp encryption {40-bit|128-bit}`

Field	Definition
40-bit	Support Encryption (40 bit keys)
128-bit	Support Maximum Strength Encryption (128 bit keys)

Example: `(config-pptpc-1)# ppp encryption 40-bit`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp exec-timeout

Use the PPTP Client **ppp exec-timeout** command to set the PPP maximum idle time before hangup.To disable PPP idle time, see *no ppp exec-timeout* command on page 17-18.

Syntax: `(config-pptpc-{n})# ppp exec-timeout minutes`

Field	Definition
minutes	Range is 0 - 99999 minutes.

Example: `(config-pptpc-1)# ppp exec-timeout 150`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp on-demand

Use the PPTP Client **ppp on-demand** command to enable on demand the feature. On demand attempts to connect only when packets are sent. To disable PPP on demand, see *no ppp encryption* command on page 17-17.

Syntax: `(config-pptpc-{n})# ppp on-demand`

Example: `(config-pptpc-1)# ppp on-demand`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp password

Use the PPTP Client **ppp password** command set the PPP password. To delete a PPP password, see *no ppp password* command on page 17-18.

Syntax: `(config-pptpc-{n})# ppp password password`

Field	Definition
password	Enter the PPP password, with a maximum of 19 characters.

Example: `(config-pptpc-1)# ppp password test-user-pswrd`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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ppp restart-timer

Use the PPTP Client **ppp restart-timer** command to configure the PPP restart timer. To reset to the default setting, see *no ppp restart-timer* command on page 17-18.

Syntax: `(config-pptpc-{n})# ppp restart-timer` *seconds*

Field	Definition
seconds	Range is 1 - 65535 seconds. Default is 3 seconds.

Example: `(config-pptpc-1)# ppp restart-timer 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp time-btwn-reconnect

Use the PPTP Client **ppp time-btwn-reconnect** command configure the time between reconnect attempts. To reset to the default setting, see *no ppp time-btwn-reconnect* command on page 17-19.

Syntax: `(config-pptpc-{n})# ppp time-btwn-reconnect` *seconds*

Field	Definition
seconds	Set the interval of time between reconnect attempts. Range is 0 - 99999 seconds with a default of 0.

Example: `(config-pptpc-1)# ppp time-btwn-reconnect 15`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp username

Use the PPTP Client **ppp username** command set the PPP Login User Name. To delete a PPP user, see *no ppp username* command on page 17-19.

Syntax: `(config-pptpc-{n})# ppp username` *username*

Field	Definition
username	Enter the Username, with a maximum of 19 characters.

Example: `(config-pptpc-1)# ppp username test-user-name`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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schedule-availability

Use the PPTP Client **schedule-availability** command to apply a schedule rule to this interface. To delete a schedule, see *no schedule-availability* command on page 17-19.

Syntax: `(config-pptpc-{n})# schedule-availability time-range` *schedule-id*

Field	Definition
schedule-id	Enter an existing schedule rule name. See *time-range* command on page 4-62 to set the schedule-id

Example: `(config-pptpc-1)# schedule-availability time-range 1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

shutdown

Use the PPTP Client **shutdown** command to disable the interface. To set the interface up (In-Service), see *no shutdown* command on page 17-19.

Syntax: `(config-pptpc-{n})# shutdown`

Example: `(config-pptpc-1)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

sip-alg

Use the PPTP Client **sip-alg** command to enable SIP ALG. To disable SIP ALG, see *no sip-alg* command on page 17-20.

Syntax: `(config-pptpc-{n})# sip-alg enable`

Example: `(config-pptpc-1)# sip-alg enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 18

Configuration - PPTPS Mode

The PPTP Server Configuration commands allow the user to configure the VPN (Virtual Private Network) Point-to Point Tunneling Protocol Server parameters.

Enter this sub-group with the **(config)# pptps** command from the Configuration mode.

The VPN PPTP Server commands are represented by the **(config-pptps)#** prompt.

PPTP Server Commands

- ***do***
- ***end***
- ***end-address***
- ***exit***
- ***history***
- ***idle-time***
- ***no commands***
- ***ppp authentication***
- ***ppp encryption***
- ***shutdown***
- ***start-address***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-pptps)# end`

Example:
```
(config-pptps)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

end-address

Use the PPTP Server **end-address** command to set the PPTP remote host IP address range end.

Syntax: `(config-pptps)# end-address` *`end-ip-address`*

Field	Definition
end-ip-address	Enter the end IP address of the range.

Example:
```
(config-pptps)# end-address 192.168.1.250
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-pptps)# exit`

Example:
```
(config-pptps)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-pptps)# history`

Example:

```
(config-pptps)# history
ppp
end-address 192.168.1.175
ppp encryption
ppp authentication pap
idle-time 99999
start-address 192.168.1.1
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

idle-time

Use the PPTP Server **idle-time** command to set the maximum idle time for a PPTP connection.To reset the idle-time to the default setting, see *no idle-time* command on page 18-5.

Syntax: `(config-pptps)# idle-time` *seconds*

Field	Definition
seconds	Enter the maximum idle time for PPTP connection. Range 0-99999 seconds, with a default of 1200.

Example: `(config-pptps)# idle-time 1500`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no idle-time

Use the PPTP Server **no idle-time** command to reset the idle time to the default setting. To set the maximum idle time for a PPTP connection, see *idle-time* command on page 18-4.

Syntax: `(config-pptps)# no idle-time`

Example: `(config-pptps)# no idle-time`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp authentication

Use the PPTP Server **no ppp authentication** command to disable PPP authentication. To enable PPP authentication, see *ppp authentication* command on page 18-6.

Syntax: `(config-pptps)# no ppp authentication {chap|ms-chap|ms-chapv2|pap}`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chap	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password. Default.

Example: `(config-pptps)# no ppp authentication`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no ppp encryption

Use the PPTP Server **no ppp encryption** command to disable PPP encryption. To enable PPP encryption, see *ppp encryption* command on page 18-6.

Syntax: `(config-pptps)# no ppp encryption {40-bit|128-bit|stateful}`

Field	Definition
40-bit	MPPE-40 - Microsoft PPP encryption algorithm.
128-bit	MPPE-128 - Microsoft PPP encryption algorithm.
stateful	Enable the stateful state for encryption.

Example: `(config-pptps)# no ppp encryption`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no shutdown

Use the PPTP Server **no shutdown** command to set the admin state of the server up (in-service). To set the admin state of the server down (out-of-service), see *shutdown* command on page 18-7.

Syntax: `(config-pptps)# no shutdown`

Example: `(config-pptps)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp authentication

Use the PPTP Server **ppp authentication** command to configure the support of authentication types for the password. To disable PPP authentication, see *no ppp authentication* command on page 18-5.

Syntax: `(config-pptps)# ppp authentication [chap|ms-chap|ms-chapv2|pap]`

Field	Definition
chap	Support Challenge Handshake Authentication (CHAP)
ms-chap	Support Microsoft CHAP (MS-CHAP).
ms-chapv2	Support Microsoft CHAP Version 2 (MS-CHAPv2).
pap	Support an unencrypted password. Default.

Example: `(config-pptps)# ppp authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

ppp encryption

Use the PPTP Server **ppp encryption** command to configure the PPP encryption. To disable PPP encryption, see *no ppp encryption* command on page 18-5.

Syntax: `(config-pptps)# ppp encryption {40-bit|128-bit|stateful}`

Field	Definition
40-bit	MPPE-40 - Microsoft PPP encryption algorithm.
128-bit	MPPE-128 - Microsoft PPP encryption algorithm.
stateful	Enable the stateful state for encryption.

Example: `(config-pptps)# ppp encryption stateful`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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shutdown

Use the PPTP Server **shutdown** command to set the admin state of the server down (out-of-service). To set the admin state up (in-service), see *no shutdown* command on page 18-6.

Syntax: `(config-pptps)# shutdown`

Example: `(config-pptps)# shutdown`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

start-address

Use the PPTP Server **start-address** command to set the PPTP remote host IP address range start.

Syntax: `(config-pptps)# start-address start-address`

Field	Definition
start-ip-address	Enter the start IP address of the range.

Example: `(config-pptps)# start-address 192.168.1.1`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 19

Configuration - RADIUS Mode

The RADIUS Configuration commands allow the user to configure the RADIUS parameters for each interface.

This sub-group is entered with the **(config)# radius-client** command from the Configuration mode.

The RADIUS commands are represented by the **(config-radius)#** prompt.

RADIUS Commands

- ***authentication***
- ***do***
- ***end***
- ***exit***
- ***history***
- ***host***
- ***key***

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authentication

Use the RADIUS **authentication** command to set the RADIUS client authentication method.

Syntax: `(config-radius)# authentication {chap|ms-chap|ms-chapv2|pap}`

Field	Definition
chap	**CHAP** - Challenge Handshake Authentication
ms-chap	**MS-CHAP** - Microsoft CHAP
ms-chapv2	**MS-CHAPv2** - Microsoft CHAP Version 2
pap	**PAP** - Unencrypted Password. Default

Example: `(config-radius)# authentication chap`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-radius)# end`

Example:
```
(config-radius)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-radius)# exit`

Example:
```
(config-radius)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-radius)# history`

Example:
```
(config-radius)# history

exit
authentication chap
host
host 192.168.1.1
key
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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host

Use the RADIUS **host** command to set the RADIUS server IP address on the system.

Syntax: **`(config-radius)# host`** *`address`* **`auth-port`** *`port`*

Field	Definition
address	Enter the IP address of the RADIUS server.
port	Enter the port number to use for RADIUS authentication. Range is 0 - 65535 with a default of 1812.

Example: **`(config-radius)# host 192.168.1.1 auth-port 1812`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

key

Use the RADIUS **key** command to set the RADIUS shared secret password.

Syntax: **`(config-radius)# key`** *`password`*

Field	Definition
password	Enter a shared secret password for RADIUS, with a maximum of 8 characters.

Example: **`(config-radius)# key testpswd`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 20

Configuration - VLAN Mode

The VLAN Configuration commands allow the user to configure the global VLAN parameters. This sub-group is entered with the **(config)# vlan** command from the Configuration mode. The global VLAN commands are represented by the **(config-vlan)#** prompt.

VLAN (Global) Commands

- ***do***
- ***end***
- ***exit***
- ***history***
- ***no commands***
- ***port-dot1q***
- ***port-priority***
- ***port-protocol-filter***
- ***pvid***
- ***tag-all***
- ***vlan-feature***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-vlan)# end`

Example:
```
(config-vlan)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-vlan)# exit`

Example:
```
(config-vlan)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-vlan)# history`

Example:
```
(config-vlan)# history

port-priority Ethernet 1.1 0
port-protocol-filter disable Ethernet 1.1
tag-port Ethernet 1.1
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no port-dot1q

Use the VLAN **no port-dot1q** command to disable dot1q tagging for the port. By default, VLAN tagging is disabled on a LAN port. In this default state, if the port receives a VLAN tagged frame, it will ignore the VLAN header and will process the ingress frames as a regular Ethernet frame. The VLAN tag will not be altered.

Note: Ingress port is a port receiving frames from a source external to the switch. Egress port is a port forwarding frames to another port(s) in the switch.

To set the port to VLAN aware mode, see *port-dot1q* command on page 20-5.

Syntax: `(config-vlan)# no port-dot1q ethernet` *port*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: `(config-vlan)# no port-dot1q ethernet 1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

no vlan

Use the VLAN **no vlan** command to clear a VLAN entry.

Syntax: `(config-vlan)# no vlan` *entry*

Field	Definition
entry	VLAN entry. Range = 2 - 4094.

Example: `(config-vlan)# no vlan 2`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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port-dot1q

Use the VLAN **port-dot1q** command to enable dot1q tagging for the port. If VLAN tagging is enabled on a port, the port will forward any untagged or priority tagged frames with a VID equal to the ingress port's PVID and the priority of the tagged frame will remain unchanged. See the *port-priority* command, on page 20-5, to set the priority of the port.

Note: Ingress port is a port receiving frames from a source external to the switch. Egress port is a port forwarding frames to another port(s) in the switch.

To clear the dot1q for the port, see *no port-dot1q* command on page 20-4.

Syntax: `(config-vlan)# port-dot1q ethernet` *port*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: `(config-vlan)# port-dot1q ethernet 1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

port-priority

Use the VLAN **port-priority** command to set the VLAN priority for the port.

Syntax: `(config-vlan)# port-priority ethernet` *port priority*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1
priority	Set priority level. Range = 0 - 7. Default is 0.

Example: `(config-vlan)# port-priority ethernet 1.1 0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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port-protocol-filter

Use the VLAN **port-protocol-filter** command to enable VLAN filtering for the port.

Note: The *vlan-feature* command, on page 20-7, must be executed before this command.

Syntax: **`(config-vlan)# port-protocol-filter {disable|enable} ethernet`** *`port`*

Field	Definition
disable	Disable VLAN filtering on defined Ethernet port.
enable	Enable VLAN filtering on defined Ethernet port.
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: **`(config-vlan)# port-protocol-filter enable ethernet 1.1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

pvid

Use the VLAN **pvid** command to set the port native VLAN ID, or PVID.

Syntax: **`(config-vlan)# pvid ethernet`** *`port`*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: **`(config-vlan)# pvid ethernet 1.1`**

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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tag-all

Use the VLAN **tag-all** command to enable dot1q tagging for all ports.

If VLAN tagging is enabled on all ports, an ingress port should forward any untagged or priority tagged frames with a VID equal to the ingress port's PVID and set the priority of the untagged frame to that of the ingress port. The priority of the tagged frame remain unchanged. See the *port-priority* command, on page 20-5, to set the priority of the port.

Note: Ingress port is a port receiving frames from a source external to the switch. Egress port is a port forwarding frames to another port(s) in the switch.

Syntax: `(config-vlan)# tag-all {disable|enable}`

Field	Definition
disable	Disable dot1q for all ports. Default.
enable	Enable dot1q for all ports.

Example: `(config-vlan)# tag-all enable`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

vlan-feature

Use the VLAN mode **vlan-feature** command to enable/disable the VLAN feature on the device.

Note: This command is not visible on the Adit 3500 or MSR, as VLAN is always enabled on these products.

Syntax: `(config-vlan)# vlan-feature {disable|enable}`

Field	Definition
disable	Disable VLAN feature.
enable	Enable VLAN feature.

Example: `(config-vlan)# vlan-feature enable`

Supported Platforms: **Adit 3104, Adit 3200**

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CHAPTER 21

Configuration - VLAN Port Mode

The VLAN Port Configuration commands allow the user to configure the VLAN port parameters. This sub-group is entered with the **(config)# vlan {*vlan-id*}** command from the Configuration mode. The VLAN Port commands are represented by the **(config-vlan-{n})#** prompt.

VLAN (Port) Commands

- ***do***
- ***end***
- ***exit***
- ***history***
- ***no commands***
- ***port***
- ***priority***
- ***voip-interface***

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-vlan-{n})# end`

Example:
```
(config-vlan-100)# end
#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-vlan-{n})# exit`

Example:
```
(config-vlan-100)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-vlan-{n})# history`

Example:
```
(config-vlan-100)# history

port-priority Ethernet 1.1 0
port-protocol-filter disable Ethernet 1.1
tag-port Ethernet 1.1
history
```

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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no commands

no port

Use the VLAN **no port** command to remove this port's membership from the VLAN. To set the preferences, see *port* command on page 21-4.

Syntax: `(config-vlan-{n})# no port ethernet` *port*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: `(config-vlan-100)# no port ethernet 1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500**

no voip-interface

Use the VLAN **no voip-interface** command to clear VLAN tagging for the originating VoIP traffic.

Syntax: `(config-vlan-{n})# no voip-interface`

Example: `(config-vlan-100)# no voip-interface`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

port

Use the VLAN **port** command to set the Ethernet port as a VLAN port member.

Syntax: `(config-vlan-{n})# port ethernet` *port*

Field	Definition
port	Ethernet port in the form {port}.{sub-interface}. **Adit 3104 and Adit 3200:** 1.1, 1.2, 1.3, 1.4, 2.1 **Adit 3500 and MSR:** 1.1 and 2.1

Example: `(config-vlan-100)# port ethernet 1.1`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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priority

Use the VLAN **priority** command to set the VLAN priority level.

Syntax: `(config-vlan-{n})# priority` *priority*

Field	Definition
priority	Set priority level. Range = 0 - 7.

Example: `(config-vlan-100)# priority 0`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

voip-interface

Use the VLAN **voip-interface** command to set the VLAN tagging for the originating VoIP traffic.

Syntax: `(config-vlan-{n})# voip-interface`

Example: `(config-vlan-100)# voip-interface`

Supported Platforms: **Adit 3104, Adit 3200, Adit 3500, MSR**

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CHAPTER 22

Configuration - Voice Port Mode

The Voice Port Configuration commands allow the user to configure the Voice Port parameters.

Enter this sub-group with the **(config)# voice-port** command from the Configuration mode.

The Voice Port commands are represented by the **(config-vport)#** prompt.

Note: There are two additional Voice Port groups (FXS-*Chapter 23* and Trunk-*Chapter 24*), please see their respective chapters for information.

Voice Port Commands

- ***digit-map (global)***
- ***do***
- ***end***
- ***exit***
- ***history***
- ***no digit-map (global)***
- ***tos***

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digit-map (global)

Use the Voice Port **digit-map** global command to configure the Digit Map on a global level. To disable digit map, see *no digit-map (global)* command on page 22-5.

Syntax: `(config-vport)# digit-map mode {long-timeout` *seconds* `|pattern` *number pattern* `|short-timeout` *seconds*`}`

Field	Definition
long-timeout *seconds*	Range is 4-60 seconds, with a default of 16.
pattern	***number*** - Enter pattern number to modify. Range is 1-30. See *show digit-map* command on page 3-37, to display the current list of Digit Map numbers. ***pattern*** - Enter the new pattern, with a maximum of 30 characters.
short-timeout *seconds*	Range is 1-10 seconds, with a default of 4.

Example: `(config-vport)# digit-map mode long-timeout 20`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-vport)# end`

Example:
```
(config-vport)# end
#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-vport)# exit`

Example:
```
(config-vport)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-vport)# history`

Example:
```
(config-vport)# history
tos sip 0fx6
tos sip value 0xff
digit-map long-timeout 10
history
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no digit-map (global)

Use the Voice Port **no digit-map** command to remove a digit map pattern. To configure digit map, see *digit-map (global)* command on page 22-2.

Syntax: `(config-vport)# no digit-map pattern` *number*

Field	Definition
pattern *number*	Enter pattern number to remove. Range is 1-30. See *show digit-map* command on page 3-37, to display the current list of Digit Map numbers.

Example: `(config-vport)# no digit-map pattern 10`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

tos

Use the Voice Port **tos** command to set the Type of Service (ToS). This command sets the precedence bits in the TOS byte of the IP header to prioritize packet handling.

Syntax: `(config-vport)# tos {rtp value` *hex-value*`|sip value` *hex-value*`}`

Field	Definition
rtp value *hex-value*	Range is 0x00 - 0xff. Default 0xb8
sip value *hex-value*	Range is 0x00 - 0xff. Default 0xdc

Example: `(config-vport)# tos rtp 0xb8`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 23

Configuration - Voice Port FXS Mode

The Voice Port FXS Configuration commands allow the user to configure the Voice Port FXS parameters.

Enter this sub-group with the **(config)# voice-port fxs** *number* command from the Configuration mode.

The Voice Port FXS commands are represented by the **(config-vport-fxs-{*n*})#** prompt.

Voice Port FXS Commands

- ***comfort-noise***
- ***description***
- ***do***
- ***echo-cancel***
- ***end***
- ***exit***
- ***history***
- ***input-gain***
- ***no commands***
- ***output-gain***
- ***per-line-logging***
- ***shutdown***
- ***signal***

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comfort-noise

Use the Voice Port FXS **comfort-noise** command to enable the comfort noise feature. To disable comfort noise, see *no comfort-noise* command on page 23-6.

Syntax: `(config-vport-fxs-{n})# comfort-noise enable`

Example: `(config-vport-fxs-1)# comfort-noise enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

description

Use the Voice Port FXS **description** command to change the description of the voice port.

Syntax: `(config-vport-fxs-{n})# description text`

Field	Definition
text	Enter a description for the port, with a maximum of 64 characters.

Example: `(config-vport-fxs-1)# description VoiceP-#2`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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echo-cancel

Use the Voice Port FXS **echo-cancel** command to enable Echo Cancellation on this trunk. To to disable Echo Cancellation, see *no echo-cancel* command on page 23-6

Syntax: `(config-vport-fxs-{n})# echo-cancel enable`

Example: `(config-vport-fxs-1)# echo-cancel enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file.

Syntax: `(config-vport-fxs-{n})# end`

Example:
```
(config-vport-fxs-1)# end
#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-vport-fxs-{n})# exit`

Example:
```
(config-vport-fxs-1)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-vport-fxs-{n})# history`

Example:
```
(config-vport-fxs-1)# history
description tests
echo-cancel enable
input-gain 4
output-gain 4
signal ground-start
history
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

input-gain

Use the Voice Port FXS **input-gain** command to set the gain on the receive side voice path for the specified voice channel(s).

Syntax: `(config-vport-fxs-{n})# input-gain value`

Field	Definition
value	Range -12 to +6dB. Default is 0.

Example:
```
(config-vport-fxs-1)# input-gain 4
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no commands

no comfort-noise

Use the Voice Port FXS **no comfort-noise** command to disable comfort noise. To enable remote access, see *comfort-noise* command on page 23-2.

Syntax: `(config-vport-fxs-{n})# no comfort-noise`

Example: `(config-vport-fxs-1)# no comfort-noise`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no echo-cancel

Use the Voice Port FXS **no echo-cancel** command disable echo cancellation on this port. To enable echo cancellation, see *echo-cancel* command on page 23-4.

Syntax: `(config-vport-fxs-{n})# no echo-cancel`

Example: `(config-vport-fxs-1)# no echo-cancel`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no per-line-logging

Use the Voice Port FXS **no per-line-logging** command disable the logging per line feature. To enable logging, see *per-line-logging* command on page 23-7.

Syntax: `(config-vport-fxs-{n})# no per-line-logging`

Example: `(config-vport-fxs-1)# no per-line-logging`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no shutdown

Use the Voice Port FXS **no shutdown** command to set this voice port up (In-Service). To set this port down (Out-of-Service), see *shutdown* command on page 23-7.

Syntax: `(config-vport-fxs-{n})# no shutdown`

Example: `(config-vport-fxs-1)# no shutdown`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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output-gain

Use the Voice Port FXS **output-gain** command to set the gain on the transmit side voice path for the specified voice channel(s).

Syntax: **(config-vport-fxs-{*n*})# output-gain** *value*

Field	Definition
value	Range -12 to +6dB. Default is 0.

Example: **(config-vport-fxs-1)# output-gain 4**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

per-line-logging

Use the Voice Port FXS **per-line-logging** command to enable the logging per line feature. To to disable logging, see *no per-line-logging* command on page 23-6

Syntax: **(config-vport-fxs-{*n*})# per-line-logging enable**

Example: **(config-vport-fxs-1)# per-line-logging enable**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

shutdown

Use the Voice Port FXS **shutdown** command to set this port down (Out-of-Service). To set this voice port up (In-Service), see *no shutdown* command on page 23-6.

Syntax: **(config-vport-fxs-{*n*})# shutdown**

Example: **(config-vport-fxs-1)# shutdown**

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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signal

Use the Voice Port FXS **signal** command to set the signaling protocol.

Syntax: `(config-vport-fxs-{n})# signal {ground-start|loop-start}`

Field	Definition
ground-start	Sets the line to Ground Start signaling
loop-start	Sets the line to Loop Start signaling

Example: `(config-vport-fxs-1)# signal ground-start`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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CHAPTER 24

Configuration - Voice Port Trunk Mode

The Voice Port Trunk Configuration commands allow the user to configure the Voice Port Trunk parameters. Enter this sub-group with the **(config)# voice-port trunk** *number* command from the Configuration mode. **Note:** The Trunk option is not supported on the Adit 3104 or the Adit 3200.

The Voice Port Trunk commands are represented by the **(config-vport-trk-{*n*})#** prompt.

Voice Port Trunk Commands

- ***comfort-noise***
- ***connection lcc***
- ***connection t1***
- ***description***
- ***digit-map***
- ***do***
- ***echo-cancel***
- ***end***
- ***exit***
- ***history***
- ***input-gain***
- ***isdn switch-type (PRI)***
- ***no commands***
- ***output-gain***
- ***registration***
- ***signal***
- ***trunk***

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comfort-noise

Use the Voice Port Trunk **comfort-noise** command to enable the comfort noise feature. To disable this feature, see *no comfort-noise* command on page 24-8.

Syntax: `(config-vport-trk-{n})# comfort-noise enable`

Example: `(config-vport-trk-1)# comfort-noise enable`

Supported Platforms: **Adit 3500, MSR**

connection lcc

Use the Voice Port Trunk **connection lcc** command to connect an MSR Link Cross Connect (LCC). To disconnect this connection, see the *no connection lcc* command on page 24-8.

Syntax: `(config-vport-trk-{n})# connection lcc number`

Field	Definition
number	Link Cross Connect. Range = 1-8.

Example: `(config-vport-trk-1)# connection lcc 2`

Supported Platforms: **MSR**

connection t1

Use the Voice Port Trunk **connection t1** command to enter the T1 connection configuration mode. To disconnect this connection, see *no connection t1* command on page 24-8.

Syntax: `(config-vport-trk-{n})# connection t1 port`

Field	Definition
port	T1 port range 1-4.

Example: `(config-vport-trk-1)# connection t1 2`

Supported Platforms: **Adit 3500**

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description

Use the Voice Port Trunk **description** command to change the description of the trunk.

Syntax: **(config-vport-trk-{*n*})# description** *text*

Field	Definition
text	Enter a description for the trunk, with a maximum of 64 characters.

Example: **(config-vport-trk-1)# description VoiceP-#4**

Supported Platforms: **Adit 3500, MSR**

digit-map

Use the Voice Port Trunk **digit-map** command to configure the Digit Map on the trunk level. To disable digit map, see *no digit-map* command on page 24-9.

Syntax: **(config-vport-trk-{*n*})# digit-map mode {default|custom}**

Field	Definition
default	Pass dialed number as a complete number for routing to the phone book, or to the proxy if there are no phone book entries.
custom	Process as for the default digit map.

Example: **(config-vport-trk-1)# digit-map mode default**

Supported Platforms: **Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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echo-cancel

Use the Voice Port Trunk **echo-cancel** command to enable Echo Cancellation on this trunk. To disable Echo Cancellation, see *no echo-cancel* command on page 24-9.

Syntax: `(config-vport-trk-{n})# echo-cancel enable`

Example: `(config-vport-trk-1)# echo-cancel enable`

Supported Platforms: **Adit 3500, MSR**

end

Use the **end** command to exit the current Configuration mode.

Syntax: `(config-vport-trk-{n})# end`

Example: `(config-vport-trk-1)# end`

`#`

Supported Platforms: **Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-vport-trk-{n})# exit`

Example: `(config-vport-trk-1)# exit`

`(config)#`

Supported Platforms: **Adit 3500, MSR**

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history

Use the **history** command to display commands that have been entered in this session.

Syntax: `(config-vport-trk-1)# history`

Example:

```
(config-vport-trk-1)# history
exit
description VoiceP-#1
digit-map mode custom
history
```

Supported Platforms: **Adit 3500, MSR**

input-gain

Use the Voice Port Trunk **input-gain** command to set the gain on the receive side voice path for the specified voice channel(s).

Syntax: `(config-vport-trk-{n})# input-gain value`

Field	Definition
value	Range -12 to +6dB. Default is 0.

Example: `(config-vport-trk-1)# input-gain 6`

Supported Platforms: **Adit 3500, MSR**

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isdn switch-type (PRI)

Use the Voice Port Trunk **isdn switch-type** command to configure the switching type (protocol) on this trunk. **Note:** Hunt sequence of the PRI is a Round-Robin type, and is not configurable.

Syntax: `(config-vport-trk-{n})# isdn switch-type {pri-dms100|pri-4ess|pri-5ess|pri-ni2}`

Field	Definition
pri-4ess	**PRI-4ess** - The class 4 US AT&T proprietary version of ISDN.
pri-5ess	**PRI-5ess** - The class 5 ISDN central office circuit switching system developed by AT&T
pri-dms100	**PRI-dms100** - Digital central office switch (number 100) from Northern Telecom.
pri-ni2	**PRI-ni2** - This is the CCITT National ISDN 2 PRI standard.

Example: `(config-vport-trk-1)# isdn switch-type pri-ni2`

Supported Platforms: **Adit 3500, MSR**

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no commands

no comfort-noise

Use the Voice Port Trunk **no comfort-noise** command to disable comfort noise. To enable remote access, see *comfort-noise* command on page 24-2.

Syntax: `(config-vport-trk-{n})# no comfort-noise`

Example: `(config-vport-trk-1)# no comfort-noise`

Supported Platforms: **Adit 3500, MSR**

no connection lcc

Use the Voice Port Trunk **no connection lcc** command to remove a Link Cross Connection (LCC). To add an LCC, see the *connection lcc* command on page 24-2.

Syntax: `(config-vport-trk-{n})# no connection lcc number`

Field	Definition
number	Enter a current LCC connection. Range = 1-8.

Example: `(config-vport-trk-1)# no connection lcc 2`

Supported Platforms: **MSR**

no connection t1

Use the Voice Port Trunk **no connection t1** command to remove a T1 connection. To enter the T1 connection configuration mode, see *connection t1* command on page 24-2.

Syntax: `(config-vport-trk-{n})# no connection t1 port`

Field	Definition
port	Enter a current T1 connection. T1 port range 1-4.

Example: `(config-vport-trk-1)# no connection t1 2`

Supported Platforms: **Adit 3500**

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no digit-map

Use the Voice Port Trunk **no digit-map** command to disable digit map on the trunk. To configure digit map, see *digit-map* command on page 24-3.

Syntax: `(config-vport-trk-{n})# no digit-map`

Example: `(config-vport-trk-1)# no digit-map`

Supported Platforms: **Adit 3500, MSR**

no echo-cancel

Use the Voice Port Trunk **no echo-cancel** command disable echo cancellation on this port. To enable echo cancellation, see *echo-cancel* command on page 24-5.

Syntax: `(config-vport-trk-{n})# no echo-cancel`

Example: `(config-vport-trk-1)# no echo-cancel`

Supported Platforms: **Adit 3500, MSR**

no registration enable

Use the Voice Port Trunk **no registration enable** command disable trunk registration. To enable registration, see *registration enable* command on page 24-12.

Syntax: `(config-vport-trk-{n})# no registration enable`

Example: `(config-vport-trk-1)# no registration enable`

Supported Platforms: **Adit 3500, MSR**

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no registration line

Use the Voice Port Trunk **no registration line** command remove a registration line. To add a registration line, see *registration line enable* command on page 24-13.

Syntax: `(config-vport-trk-{n})# no registration line number`

Field	Definition
number	Enter line number to Remove. Range 1 -300. **Note:** This line must be enabled for this command to be accepted.

Example: `(config-vport-trk-1)# no registration line 1`

Supported Platforms: **Adit 3500, MSR**

no registration line enable

Use the Voice Port Trunk **no registration line enable** command to disable a registration line. To enable line registration, see *registration line enable* command on page 24-13.

Syntax: `(config-vport-trk-{n})# no registration line number enable`

Field	Definition
number	Enter line number to disable. Range 1 -300. **Note:** This line must be enabled for this command to be accepted.

Example: `(config-vport-trk-1)# no registration line 1 enable`

Supported Platforms: **Adit 3500, MSR**

no registration line logging

Use the Voice Port Trunk **no registration line logging** command disable line logging on a PBX line. To enable logging, see *registration line logging* command on page 24-14.

Syntax: `(config-vport-trk-{n})# no registration line number logging`

Field	Definition
number	Enter line number to disable. Range 1 -300.

Example: `(config-vport-trk-1)# no registration line 1 logging`

Supported Platforms: **Adit 3500, MSR**

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output-gain

Use the Voice Port Trunk **output-gain** command to set the gain on the transmit side voice path for the specified voice channel(s).

Syntax: **`(config-vport-trk-{`***`n`***`})# output-gain`** *`value`*

Field	Definition
value	Range -12 to +6dB. Default is 0.

Example: **`(config-vport-trk-1)# output-gain 6`**

Supported Platforms: **Adit 3500, MSR**

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registration

The registration command enables the user to Add, Edit, Remove, Enable, Disable PBX line number behind a voice trunk that will register to the SIP proxy.

registration enable

Use the Voice Port Trunk **registration enable** command to enable the Voice Port registration feature. To disable Voice Port registration, see *no registration enable* command on page 24-9.

Syntax: **(config-vport-trk-{***n***})# registration enable**

Example: **(config-vport-trk-1)# registration enable**

Supported Platforms: **Adit 3500, MSR**

registration line authentication

Use the Voice Port Trunk **registration line authentication** command to configure the username to authenticate.

Syntax: **(config-vport-trk-{***n***})# registration line** *value* **line-numbers** *value* **authentication {phone-number|username** *username***} password** *password*

Field	Definition
line *value*	Enter the PBX line number to configure. Range is 1 - 300.
line-numbers *value*	Define the number of lines in this block that are going to be registered. Starting from the *first-phone-number*, increased by 1 each.
phone-number	Set the phone number to authenticate.
username *username*	Set the user name to authenticate.
password	Enter a password for the authentication.

Example: **(config-vport-trk-1)# registration line 1 line-numbers 3 authentication phone-number password hello**

Supported Platforms: **Adit 3500, MSR**

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registration line enable

Use the Voice Port Trunk **registration line enable** command to enable registration. To disable registration, see *no registration line enable* command on page 24-10.

Syntax: `(config-vport-trk-{n})# registration line value line-numbers value enable`

Field	Definition
line *value*	Enter the PBX line number to configure. Range is 1 - 300.
line-numbers *value*	Define the number of lines in this block that are going to be registered. Starting from the *first-phone-number*, increased by 1 each.

Example: `(config-vport-trk-1)# registration line 4 line-numbers 3 enable`

Supported Platforms: **Adit 3500, MSR**

registration line first-phone-number

Use the Voice Port Trunk **registration line first-phone-number** command to define the first number in a block that will be registered.

Syntax: `(config-vport-trk-{n})# registration line value line-numbers value first-phone-number phone-number description description`

Field	Definition
line *value*	Enter the PBX line number to configure. Range is 1 - 300.
line-numbers *value*	Define the number of lines in this block that is going to be registered. Starting from the *first-phone-number*, increased by 1 each.
phone-number	Enter the first number in a block that will be registered.
description	Enter a description with a maximum of 20 characters.

Example: `(config-vport-trk-1)# registration line 1 line-numbers 3 first-phone-number 3032185555 description turin`

Supported Platforms: **Adit 3500, MSR**

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registration line logging

Use the Voice Port Trunk **registration line authentication** command to enable logging on this line. To disable logging, see *no registration line logging* command on page 24-10.

Syntax: **(config-vport-trk-{*n*})# registration line *value* line-numbers *value* logging**

Field	Definition
line *value*	Enter the PBX line number to configure. Range is 1 - 300.
line-numbers *value*	Define the number of lines in this block that is going to be registered. Starting from the *first-phone-number*, increased by 1 each.

Example: **(config-vport-trk-1)# registration line 4 line-numbers 3 logging**

Supported Platforms: **Adit 3500, MSR**

signal

Use the Voice Port Trunk **signal** command to configure the trunk signal type for a CAS trunk.

Syntax: **(config-vport-trk-{*n*})# signal {delay-dial|immediate|wink-start}**

Field	Definition
delay-dial	Set the trunk to CAS Delay Dial signaling.
immediate	Set the trunk to CAS Immediate Start signaling.
wink-start	Set the trunk to CAS Wink Start signaling.

Example: **(config-vport-trk-1)# signal immediate**

Supported Platforms: **Adit 3500, MSR**

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trunk

Use the Voice Port Trunk **trunk** command to set the Trunk ID.

Syntax: **`(config-vport-trk-{`***`n`***`})# trunk`** *`trunk-id`*

Field	Definition
trunk-id	Enter a trunk ID. Maximum of 20 characters.

Example: **`(config-vport-trk-1)# trunk VPtrunk1`**

Supported Platforms: **Adit 3500, MSR**

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CHAPTER 25

Configuration - Voice Service SIP Mode

The Voice Service SIP Configuration commands allow the user to configure the Voice Trunk SIP parameters.

Enter this sub-group with the **(config)# voice-service sip** command from the Configuration mode.

The Voice Port commands are represented by the **(config-voice-serv-sip)#** prompt.

Voice Service SIP Commands

- ***calling-party-disc***
- ***conference***
- ***do***
- ***dtmf***
- ***early-media***
- ***end***
- ***exit***
- ***fax-protocol-t38 ecs***
- ***fax-protocol-t38 redundancy***
- ***fax-protocol-t38 signaling***
- ***feature-mode***
- ***gateway-ip***
- ***history***
- ***no commands***
- ***outbound-proxy***
- ***phone-number***
- ***prack***
- ***privacy-mode***
- ***proxy-server***
- ***proxy-type***
- ***redundancy advance-retries***
- ***redundancy advance-timeout***
- ***redundancy filter-incoming***
- ***redundancy primary-address***
- ***redundancy rollback-timer***
- ***redundancy secondary-address***
- ***redundancy ttl***
- ***redundancy type***
- ***registration***
- ***rtp-base-port***
- ***session-timer***
- ***sip-port***
- ***transport***

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calling-party-disc

Use the Voice Service SIP **calling-party-disc** command to configure the call party disconnect feature.

Syntax: `(config-voice-serv-sip)# calling-party-disc` *duration*

Field	Definition
duration	Range 500 - 3000 ms.

Example: `(config-voice-serv-sip)# calling-party-disc 600`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

conference

Use the Voice Service SIP **conference** command to enable the conference calling feature. To disable conference, see *no conference* command on page 25-9.

Syntax: `(config-voice-serv-sip)# conference enable`

Example: `(config-voice-serv-sip)# conference enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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do

Use the **do** commands to run User and Privileged mode commands. The following are links to the User and Privileged **do** commands.

User Mode Commands

date command, on page 2-2

enable command, on page 2-2

end command, on page 2-2

exit command, on page 2-3

help command, on page 2-3

history command, on page 2-4

ping command, on page 2-5

show command, on page 2-6

traceroute command, on page 2-33

Privileged Mode Commands

clear command, on page 3-2

configure terminal command, on page 3-3

copy command, on page 3-3

date command, on page 3-4

debug command, on page 3-5

end command, on page 3-12

exit command, on page 3-12

help command, on page 3-13

history command, on page 3-14

log clear command, on page 3-15

no debug command, on page 3-16

ping command, on page 3-17

reload command, on page 3-18

show command, on page 3-19

traceroute command, on page 3-67

upgrade command, on page 3-67

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dtmf

Use the Voice Service SIP **dtmf** command to configure the DTMF events.

Syntax: `(config-voice-serv-sip)# dtmf {inband|rfc2833}`

Field	Definition
inband	Configure the DTMF in-band, as part of the RTP packets.
rfc2833	Configure the DTMF events out-of-band, as RTP event packets.

Example: `(config-voice-serv-sip)# dtmf inband`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

early-media

Use the Voice Service SIP **early-media** command to configure the SIP early media. Early Media is the ability of two SIP user agents to communicate before a SIP call is actually established. Support for early media is important largely for interoperability with the PSTN.

Syntax: `(config-voice-serv-sip)# early-media {auto|180|183}`

Field	Definition
auto	Send 180/183, based on if in-band call progress tones are available.
180	The 180 Ringing message is a provisional or informational response used to indicate that the INVITE message has been received by the user agent and that alerting is taking place.
183	The 183 Session Progress response indicates that information about the call state is present in the message body media information. **Note:** Both 180 and 183 messages may contain SDP which allow an early media session to be established prior to the call being answered.

Example: `(config-voice-serv-sip)# early-media auto`

Supported Platforms: **Adit 3500, MSR**

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end

Use the **end** command to exit the current configuration mode, and must be used to mark the end of any configuration file. This command can be entered in any configuration mode with the same result.

Syntax: `(config-voice-serv-sip)# end`

Example:
```
(config-voice-serv-sip)# end
#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

exit

Use the **exit** command to close your current connection if you are in the User mode, or Privileged mode. If the command is entered in a subconfiguration mode (Interface or Routing), this command takes you to the next higher level (example: back to Privileged mode from Interface configuration mode).

Syntax: `(config-voice-serv-sip)# exit`

Example:
```
(config-voice-serv-sip)# exit
(config)#
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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fax-protocol-t38 ecs

Use the Voice Service SIP **fax-protocol-t38 ecs** command to configure the fax Error Correction Scheme parameter.

Note: For the MSR, T.38 will be supported in a future release.

Syntax: `(config-voice-serv-sip)# fax-protocol-t38 ecs {none|redundant}`

Example: `(config-voice-serv-sip)# fax-protocol-t38 ecs redundant`

Syntax Descriptions:

Variable	Definition
none	Set error correction to none.
redundant	Set error correction to redundant. Default.

Supported Platforms: **Adit 3104, Adit 3500, MSR**

fax-protocol-t38 redundancy

Use the Voice Service SIP **fax-protocol-t38 redundancy** command to set the T.38 protocol high and low speed redundancy.

Note: For the MSR, T.38 will be supported in a future release.

Syntax: `(config-voice-serv-sip)# fax-protocol-t38 {hs-redundancy value}|ls-redundancy value}`

Example: `(config-voice-serv-sip)# fax-protocol-t38 hs-redundancy 1`

Syntax Descriptions:

Variable	Definition
hs-redundancy	Configures the number of duplicate packets to transmit during a high-speed T.38 fax call. **Note:** Setting the HS Redundancy to greater than 0 will cause a significant increase in the network bandwidth consumed by the fax call. Range 0-3 packets, with a default of 0 packets (no redundancy).
ls-redundancy	Configures the number of duplicate packets to transmit during a low-speed T.38 fax call machine protocol. Range 0 to 4 packets (0 = no redundancy), with a default of 3 packets.

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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fax-protocol-t38 signaling

Use the Voice Service SIP **fax-protocol-t38 signaling** command to configure fax signaling.

Note: For the MSR, T.38 will be supported in a future release.

Syntax: `(config-voice-serv-sip)# fax-protocol-t38 signaling {nse-only|nse-preferred|sdp-only|sdp-preferred}`

Example: `(config-voice-serv-sip)# fax-protocol-t38 signaling sdp-preferred`

Syntax Descriptions:

Variable	Definition
nse-only	Named Service Element (NSE) will be the only method tried without any attempt to try alternate signaling method to establish connection if it fails.
sdp-only	Session Description Protocol (SDP) will be the only method tried without any attempt to try alternate signaling method to establish connection if it fails.
nse-preferred	Named Service Element (NSE) preferred will be the first method tried with an attempt to try the alternate SDP signaling method to connect if it fails.
sdp-preferred	Session Description Protocol (SDP) preferred will be the first method tried with an attempt to try the alternate NSE signaling method to connect if it fails. Default.

Supported Platforms: **Adit 3104, Adit 3500, MSR**

feature-mode

Use the Voice Service SIP **feature-mode** command to determine where the intelligence for the calling features will lie, offering a choice between server-based (Info) and device-based (local) features.

Syntax: `(config-voice-serv-sip)# feature-mode {info|local}`

Field	Definition
info	This selection is used with BroadSoft 11.1 Info Mode Proxy. **Note:** On a BroadSoft server, the Adit device must be configured as "Generic SIP Standard (Proxy Address)".
local	Default is Local.

Example: `(config-voice-serv-sip)# feature-mode info`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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gateway-ip

Use the Voice Service SIP **gateway-ip** command to set the IP address to be used as the source IP for VoIP.

Syntax: `(config-voice-serv-sip)# gateway-ip` *address*

Field	Definition
address	The IP address to be used as the source IP for VoIP services when it matches one of our up or running interfaces' IP addresses, otherwise our VoIP source IP address is determined by the previous automatic algorithm.

Example: `(config-voice-serv-sip)# gateway-ip 10.10.2.1`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

history

Use the **history** command to display commands that have been entered in this session. This command can be entered in any configuration mode.

Syntax: `(config-voice-serv-sip)# history`

Example: `(config-voice-serv-sip)# history`

```
feature-mode
outbound-proxy
outbound-proxy ip-address 192.168.2.2
dtmf inband
outbound-proxy 192.168.1.140
proxy
proxy-server 10.10.0.1
exit
history
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no commands

no conference

Use the Voice Service SIP **no conference** command to disable the conference feature. To enable conference, see *conference* command on page 25-2.

Syntax: `(config-voice-serv-sip)# no conference`

Example: `(config-voice-serv-sip)# no conference`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no outbound-proxy

Use the Voice Service SIP **no outbound-proxy** command to disable the outbound proxy. To enable outbound proxy, see *outbound-proxy* command on page 25-11.

Syntax: `(config-voice-serv-sip)# no outbound-proxy`

Example: `(config-voice-serv-sip)# no outbound-proxy`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no prack

Use the Voice Service SIP **no prack** command to disable PRACK. To enable PRACK, see *prack* command on page 25-11.

Syntax: `(config-voice-serv-sip)# no prack`

Example: `(config-voice-serv-sip)# no prack`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no proxy-server

Use the Voice Service SIP **no proxy-server** command to disable proxy server. To enable proxy server, see *proxy-server* command on page 25-12.

Syntax: `(config-voice-serv-sip)# no proxy-server`

Example: `(config-voice-serv-sip)# no proxy-server`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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no redundancy filter-incoming

Use the Voice Service SIP **no redundancy-filter-incoming** command to disable the incoming redundancy filter. To enable filter, see *redundancy filter-incoming* command on page 25-14.

Syntax: `(config-voice-serv-sip)# no redundancy filter-incoming`

Example: `(config-voice-serv-sip)# no redundancy filter-incoming`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no redundancy rollback-timer

Use the Voice Service SIP **no redundancy rollback-timer** command to disable the redundancy rollback timer. To enable timer, see *redundancy rollback-timer* command on page 25-15.

Syntax: `(config-voice-serv-sip)# no redundancy rollback-timer`

Example: `(config-voice-serv-sip)# no redundancy rollback-timer`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no registration ignore-negotiated

Use the Voice Service SIP **no registration ignore-negotiated** command to disable ignore negotiated expiration timeout. To enable ignore negotiated expiration timeout, see *registration* command on page 25-17.

Syntax: `(config-voice-serv-sip)# no registration ignore-negotiated`

Example: `(config-voice-serv-sip)# no registration ignore-negotiated`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

no session-timer mode

Use the Voice Service SIP **no session-timer mode** command to disable the session timer mode. To enable session timer mode, see *session-timer* command on page 25-18.

Syntax: `(config-voice-serv-sip)# no session-timer mode`

Example: `(config-voice-serv-sip)# no session-timer mode`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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outbound-proxy

Use the Voice Service SIP **outbound-proxy** command to configure the SIP outbound proxy. To disable outbound proxy, see *no outbound-proxy* command on page 25-9.

Syntax: `(config-voice-serv-sip)# outbound-proxy {hostname hostname| ip-address address}`

Field	Definition
hostname	Enter the host name of the outbound proxy.
address	Enter the IP address of the outbound proxy.

Example: `(config-voice-serv-sip)# outbound-proxy ip-address 192.168.1.140`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

phone-number

Use the Voice Service SIP **phone-number** command to configure the phone number maximum size.

Syntax: `(config-voice-serv-sip)# phone-number max-size number`

Field	Definition
number	Enter the maximum size for the phone number. Range 3 - 24.

Example: `(config-voice-serv-sip)# phone-number max-size 11`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

prack

Use the Voice Service SIP **prack** command to enable Provisional Acknowledgement (PRACK), as per RFC 3262. To disable PRACK, see *no prack* command on page 25-9.

Syntax: `(config-voice-serv-sip)# prack enable`

Example: `(config-voice-serv-sip)# prack enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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privacy-mode

Use the Voice Service SIP **privacy-mode** command to configure the SIP privacy mode.

Syntax: `(config-voice-serv-sip)# privacy-mode {none|rfc3325}`

Field	Definition
none	Disables the Privacy Mode. Default is None.
rfc3325	Enables support for RFC 3325, as supported on the Sylantro Application Server.

Example: `(config-voice-serv-sip)# privacy-mode none`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

proxy-server

Use the Voice Service SIP **proxy-server** command to configure the SIP proxy server. To disable Proxy server, see *no proxy-server* command on page 25-9.

Syntax: `(config-voice-serv-sip)# proxy-server {hostname` *`hostname`*`| ip-address` *`address`*`}`

Field	Definition
hostname	Enter the host name of the SIP proxy server, with a maximum number of 20 characters (including the port if entered).
address	Enter the IP address of the SIP proxy server.

Example: `(config-voice-serv-sip)# proxy-server 192.167.1.200`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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proxy-type

Use the Voice Service SIP **proxy-type** command to configure the SIP proxy type.

Syntax: `(config-voice-serv-sip)# proxy-type {broadsoft-info|generic|sylantro}`

Field	Definition
broadsoft-info	Sets the SIP proxy type to BroadSoft.
generic	Sets the SIP proxy type to generic.
sylantro	Sets the SIP proxy type to Sylantro.

Example: `(config-voice-serv-sip)# proxy-type generic`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

redundancy advance-retries

Use the Voice Service SIP **redundancy advance-retries** command to set the number of retries before a proxy is considered unreachable and moves onto the next.

Syntax: `(config-voice-serv-sip)# redundancy advance-retries` *number*

Field	Definition
number	Range is 0 - 10, with a default of 3.

Example: `(config-voice-serv-sip)# redundancy advance-retries 5`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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redundancy advance-timeout

Use the Voice Service SIP **redundancy advance-timeout** command to set the interval of time before moving onto the next proxy, when the first is not reachable.

Syntax: `(config-voice-serv-sip)# redundancy advance-timeout` *number*

Field	Definition
number	Range 0 - 10 seconds, with a default of 2.

Example: `(config-voice-serv-sip)# redundancy advance-timeout 5`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

redundancy filter-incoming

Use the Voice Service SIP **redundancy filter-incoming** command to enable filtering of packets from unknown SIP servers. To filtering, see *no redundancy filter-incoming* command on page 25-10.

Syntax: `(config-voice-serv-sip)# redundancy filter-incoming enable`

Example: `(config-voice-serv-sip)# redundancy filter-incoming enable`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

redundancy primary-address

Use the Voice Service SIP **redundancy primary-address** command to configure the primary outbound proxy.

Syntax: `(config-voice-serv-sip)# redundancy primary-address` *address*

Field	Definition
address	Enter the IP address of the primary outbound proxy.

Example:
```
(config-voice-serv-sip)# redundancy primary-address
192.168.100.140
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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redundancy rollback-timer

Use the Voice Service SIP **redundancy rollback-timer** command to set the interval of time between the time the primary proxy fails, and when a rollback is performed back to the primary proxy. To disable rollback timer, see *no redundancy rollback-timer* command on page 25-10.

Syntax: `(config-voice-serv-sip)# redundancy rollback-timer` *number*

Field	Definition
number	Range 60 - 3600 seconds, or 0 (disabled), with a default of 300 (5 min).

Example: `(config-voice-serv-sip)# redundancy rollback-timer 300`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

redundancy secondary-address

Use the Voice Service SIP **redundancy secondary-address** command to configure the secondary outbound proxy.

Syntax: `(config-voice-serv-sip)# redundancy secondary-address` *address*

Field	Definition
address	Enter the IP address of the secondary outbound proxy.

Example:
```
(config-voice-serv-sip)# redundancy secondary-address
192.168.100.140
```

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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redundancy ttl

Use the Voice Service SIP **redundancy ttl** command to set the set the SRV Time To Live (TTL) option. The TTL is a set interval of time between flushing the SRV cache.

Syntax: `(config-voice-serv-sip)# redundancy ttl` *seconds*

Field	Definition
seconds	Range 0 - 3600 seconds, with a default of 3600.

Example: `(config-voice-serv-sip)# redundancy ttl 900`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

redundancy type

Use the Voice Service SIP **redundancy type** command to configure the redundancy type.

Syntax: `(config-voice-serv-sip)# redundancy type {none|srv|user}`

Field	Definition
none	Redundancy feature is disabled. Default.
srv	An SRV lookup will be performed using the main proxy. The hosts/ IPs found are used to form the proxy redundancy list.
user	The SIP messages will be sent to the primary proxy. If there is a failure it will be sent to the secondary proxy.

Example: `(config-voice-serv-sip)# redundancy type none`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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registration

Use the Voice Service SIP **registration** command to configure the SIP registration, which allows trunk registration for each user of a PBX. To disable ignore negotiated registration timeout, see *no registration ignore-negotiated* command on page 25-10.

Syntax: `(config-voice-serv-sip)# registration {expire seconds|failed-time seconds|ignore-negotiated enable|rate value|retry-timeout milliseconds|tries value|window-size value}`

Field	Definition
expire *seconds*	Sets the registration expire timeout. Range is 60 - 86400 seconds, with a default of 3600.
failed-time *seconds*	Sets the failed registration timer. Range is 30 - 86400 seconds, with a default of 60.
ignore-negotiated enable	Enable ignore negotiated expiration timeout.
rate *value*	Sets the number of registrations per minute. Range is 1-300, with a default of 60.
retry-timeout *milliseconds*	Sets the SIP retry timeout (SIP T1). Range is 200 - 5000 milliseconds, with a default of 500.
tries *value*	Range is 1 - 10 times, with a default of 5.
window-size *value*	Range is 1 - 304 , with a default of 10.

Example: `(config-voice-serv-sip)# registration expire 5000`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

rtp-base-port

Use the Voice Service SIP **rtp-base-port** command to configure the RTP base port. Choice of port to be advertised during the media-negotiation phase of call setup and used during the call to send and receive RTP.

Syntax: `(config-voice-serv-sip)# rtp-base-port number`

Field	Definition
number	Range 1026 - 65000, with a default of 28000.

Example: `(config-voice-serv-sip)# rtp-base-port 2500`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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session-timer

session-timer mode

Use the Voice Service SIP **session-timer mode** command to configure the timer mode. To disable the timer mode, see *no session-timer mode* command on page 25-10.

Syntax: `(config-voice-serv-sip)# session-timer mode {requested|supported}`

Field	Definition
requested	System shall initiate Session Timer procedures in outgoing initial INVITE's by including a Session-Expires header.
supported	System will respond to a Session-Expires request from a remote proxy or UAC.

Example: `(config-voice-serv-sip)# session-timer mode requested`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

session-timer refresher

Use the Voice Service SIP **session-timer refresher** command to configure the refresher timer.

Syntax: `(config-voice-serv-sip)# session-timer refresher {none|uac|uas}`

Field	Definition
none	No refresher parameter shall be sent in an INVITE, and any refresher received from the remote proxy or UAC shall be echoed back.
uac	User Agent Client. Default is UAC.
uas	User Agent Server.

Example: `(config-voice-serv-sip)# session-timer refresher uas`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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session-timer timeout

Use the Voice Service SIP **session-timer timeout** command to configure the interval of idle time to pass before timeout.

Syntax: `(config-voice-serv-sip)# session-timer timeout` *seconds*

Field	Definition
seconds	Range 90 - 7200 seconds, with a default of 1800.

Example: `(config-voice-serv-sip)# session-timer timeout 2500`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

sip-port

Use the Voice Service SIP **sip-port** command to select a TCP or UDP port to receive SIP traffic.

Syntax: `(config-voice-serv-sip)# sip-port` *port*

Field	Definition
port	Range 1026 - 65535, default is 5060

Example: `(config-voice-serv-sip)# sip-port 2500`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

transport

Use the Voice Service SIP **transport** command to configure the transport layer protocol to be used for carrying SIP payloads. **Note:** UDP is commonly used and is the default.

Syntax: `(config-voice-serv-sip)# transport {tcp|udp}`

Field	Definition
tcp	Transmission Control Protocol.
udp	User Datagram Protocol

Example: `(config-voice-serv-sip)# transport udp`

Supported Platforms: **Adit 3104, Adit 3500, MSR**

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